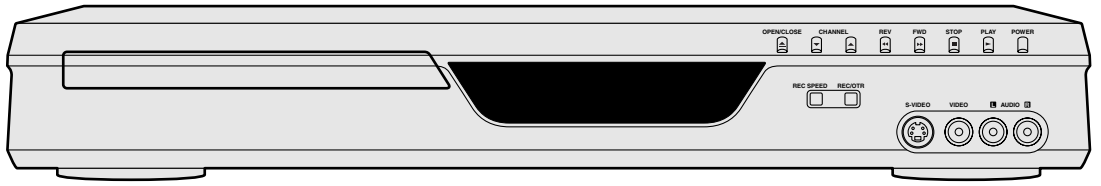
SYLVANIA

SERVICE MANUAL

DVD RECORDER

DVR91DG



IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all Funai Equipment. The service procedures recommended by Funai and described in this service manual are effective methods of performing service operations. Some of these service special tools should be used when and as recommended.

It is important to note that this service manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Funai could not possibly know, evaluate and advice the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Funai has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Funai must first use all precautions thoroughly so that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

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SPECIFICATIONS

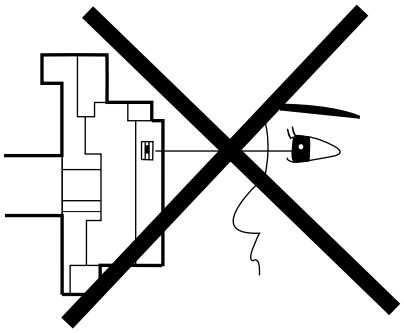
Item	Conditions	Unit	Nominal	Limit
1. VIDEO				
1-1. Video Output	75 Ω load	Vp-p	1.0	
1-2. S-Video Output				
Y (Luminance)	75 Ω load	Vp-p	1.0	
C (Chrominance)	75 Ω load	Vp-p	0.286	
1-3. Component Output				
Y (Luminance)	75 Ω load	Vp-p	1.0	
Cb (U)	75 Ω load	Vp-p	0.7	
Cr (V)	75 Ω load	Vp-p	0.7	
2. AUDIO				
2-1. Output Level		Vrms	2.0	
2-2. Frequency Response				
DVD-VIDEO LPCM	fs = 96 kHz	Hz	4 - 44 k	
	fs = 48 kHz	Hz	4 - 22 k	
Audio CD	fs = 44.1 kHz	Hz	4 - 20 k	
2-3. Signal/Noise Ratio				
DVD-VIDEO LPCM		dB	120	
CD		dB	120	
REC & Playback	Input: 2 Vrms, Rec Speed: XP	dB	96	
2-4. Dynamic Range				
DVD-VIDEO LPCM		dB	102	
CD		dB	98	
REC & Playback	Input: 2 Vrms, Rec Speed: XP	dB	95	
2-5. THD+N	1 kHz, 0 dB			
DVD-VIDEO LPCM		%	0.002	
CD		%	0.0025	
REC & Playback	Input: 2 Vrms, Rec Speed: XP	%	0.004	

Notes:

1. All Items are measured without pre-emphasis unless otherwise specified.
2. Power supply: AC 120 V, 60 Hz
3. Load imp.: 100 kΩ
4. Room ambient: 5 °C ~ 40 °C

LASER BEAM SAFETY PRECAUTIONS

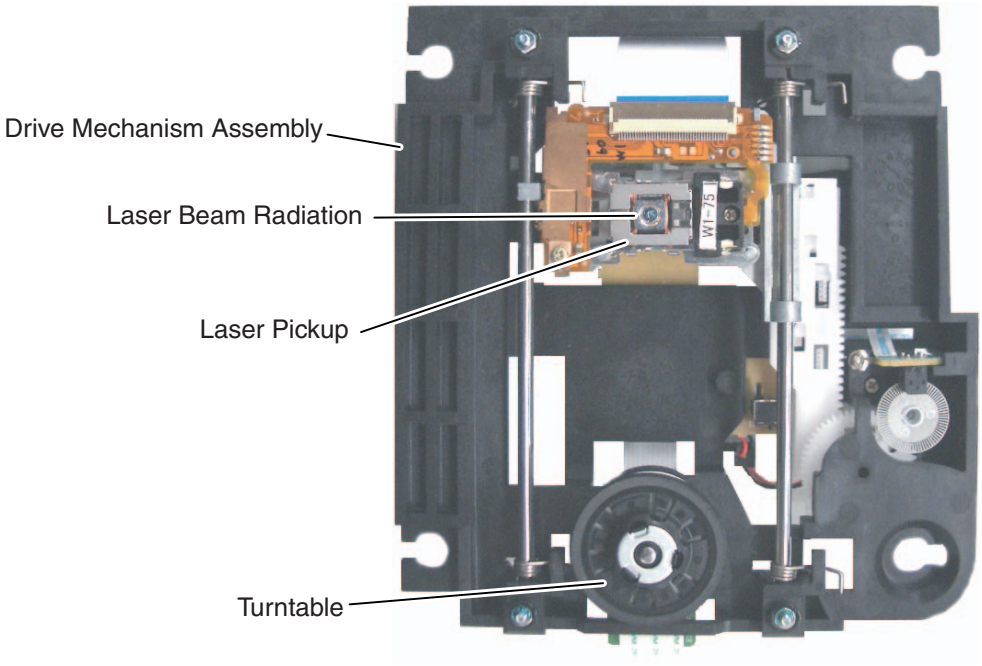
This DVD player uses a pickup that emits a laser beam.



Do not look directly at the laser beam coming from the pickup or allow it to strike against your skin.

The laser beam is emitted from the location shown in the figure. When checking the laser diode, be sure to keep your eyes at least 30 cm away from the pickup lens when the diode is turned on. Do not look directly at the laser beam.

CAUTION: Use of controls and adjustments, or doing procedures other than those specified herein, may result in hazardous radiation exposure.



DANGER - VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.
CAUTION - VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO BEAM.
ATTENTION - RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE EXPOSITION DANGEREUSE AU FAISCEAU.
注意 - ここを開くと可視及び不可視のレーザー光が出ます。ビームを直接見たり、触れたりしないでください。

Location: Inside Top of DVD mechanism.

IMPORTANT SAFETY PRECAUTIONS

Product Safety Notice

Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc. Parts that have special safety characteristics are identified by a ⚠ on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are carefully inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Precautions during Servicing

A. Parts identified by the ⚠ symbol are critical for safety. Replace only with part number specified.

B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements. Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

C. Use specified internal wiring. Note especially:
1) Wires covered with PVC tubing
2) Double insulated wires
3) High voltage leads

D. Use specified insulating materials for hazardous live parts. Note especially:
1) Insulation tape
2) PVC tubing
3) Spacers
4) Insulators for transistors

E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

F. Observe that the wires do not contact heat producing parts (heat sinks, oxide metal film resistors, fusible resistors, etc.).

G. Check that replaced wires do not contact sharp edges or pointed parts.

H. When a power cord has been replaced, check that 5 - 6 kg of force in any direction will not loosen it.

I. Also check areas surrounding repaired locations.

J. Be careful that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

K. Crimp type wire connector
The power transformer uses crimp type connectors which connect the power cord and the primary side of the transformer. When replacing the transformer, follow these steps carefully and precisely to prevent shock hazards.
Replacement procedure
1) Remove the old connector by cutting the wires at a point close to the connector.
Important: Do not re-use a connector. (Discard it.)
2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.
3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.
4) Use a crimping tool to crimp the metal sleeve at its center. Be sure to crimp fully to the complete closure of the tool.

L. When connecting or disconnecting the internal connectors, first, disconnect the AC plug from the AC outlet.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts, and wires have been returned to their original positions. Afterwards, do the following tests and confirm the specified values to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1: Ratings for selected area

AC Line Voltage	Clearance Distance (d), (d')
120 V	≥ 3.2 mm (0.126 inches)

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

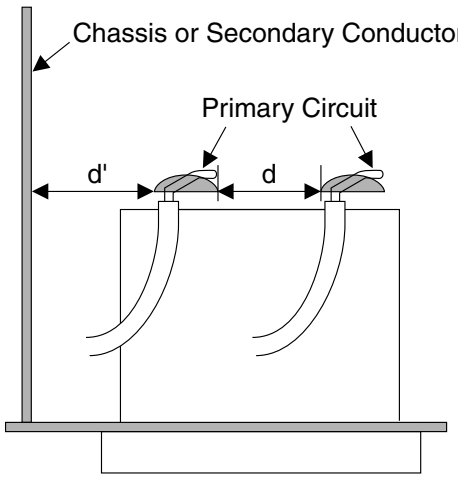


Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) is lower than or equal to the specified value in the table below.

Measuring Method (Power ON):

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across the terminals of load Z. See Fig. 2 and the following table.

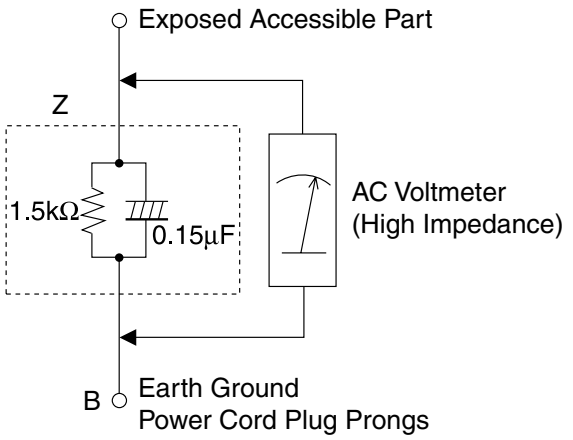


Fig. 2

Table 2: Leakage current ratings for selected areas

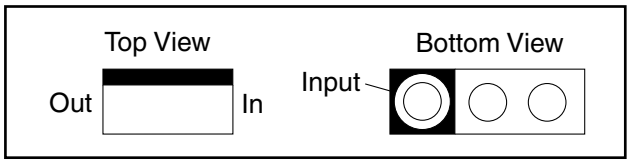
AC Line Voltage	Load Z	Leakage Current (i)	Earth Ground (B) to:
120 V	0.15 μF CAP. & 1.5 kΩ RES. Connected in parallel	i ≤ 0.5 mA Peak	Exposed accessible parts

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

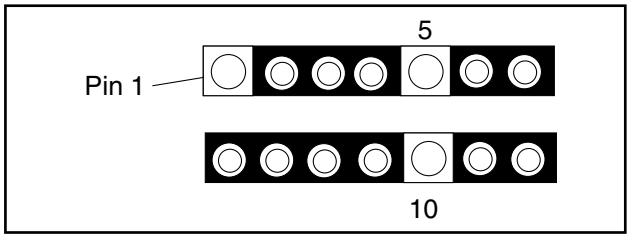
STANDARD NOTES FOR SERVICING

Circuit Board Indications

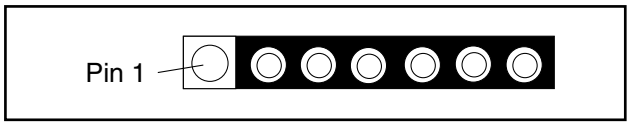
1. The output pin of the 3 pin Regulator ICs is indicated as shown.



2. For other ICs, pin 1 and every fifth pin are indicated as shown.

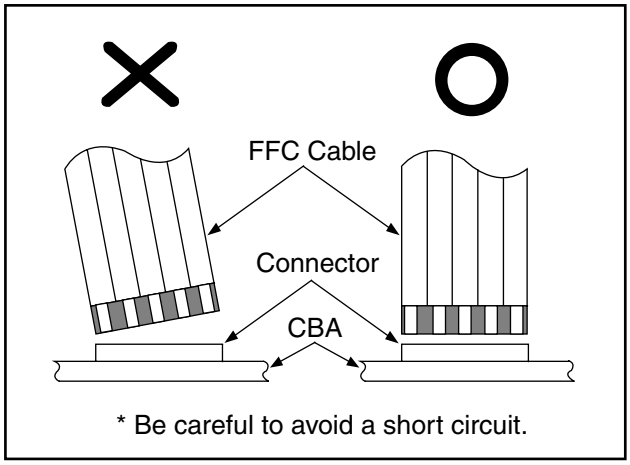


3. The 1st pin of every male connector is indicated as shown.



Instructions for Connectors

1. When you connect or disconnect the FFC (Flexible Foil Connector) cable, be sure to first disconnect the AC cord.
2. FFC (Flexible Foil Connector) cable should be inserted parallel into the connector, not at an angle.



Pb (Lead) Free Solder

When soldering, be sure to use the Pb free solder.

How to Remove / Install Flat Pack-IC

1. Removal

With Hot-Air Flat Pack-IC Desoldering Machine:

1. Prepare the hot-air flat pack-IC desoldering machine, then apply hot air to the Flat Pack-IC (about 5 to 6 seconds). (Fig. S-1-1)

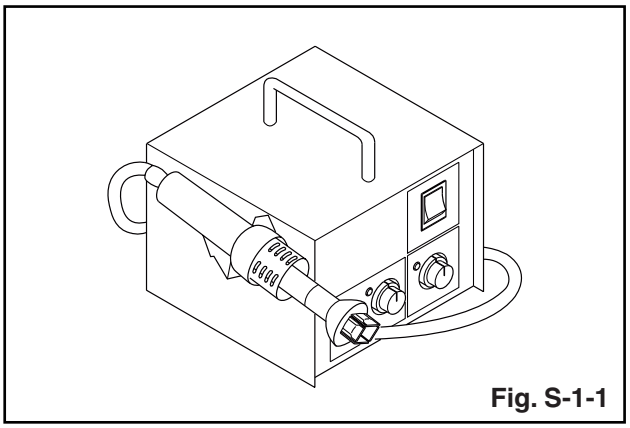


Fig. S-1-1

2. Remove the flat pack-IC with tweezers while applying the hot air.
3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

CAUTION:

1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not supply hot air to the chip parts around the flat pack-IC for over 6 seconds because damage to the chip parts may occur. Put masking tape around the flat pack-IC to protect other parts from damage. (Fig. S-1-2)

3. The flat pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or the solder lands under the IC when removing it.

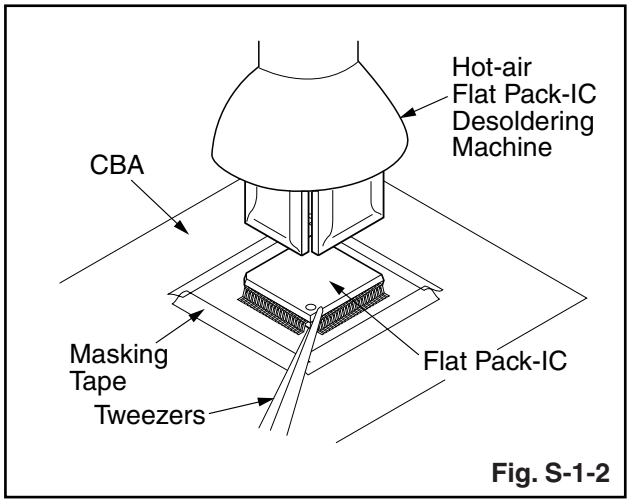


Fig. S-1-2

With Soldering Iron:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)

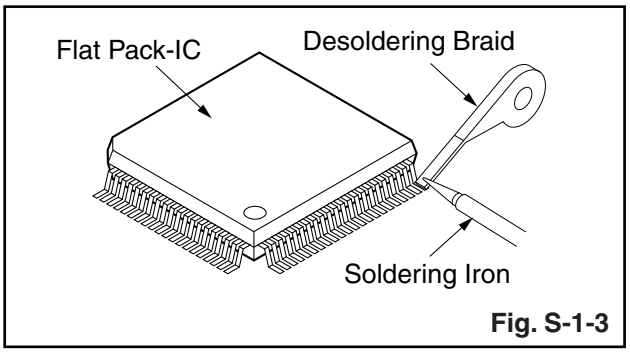


Fig. S-1-3

2. Lift each lead of the flat pack-IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air desoldering machine. (Fig. S-1-4)

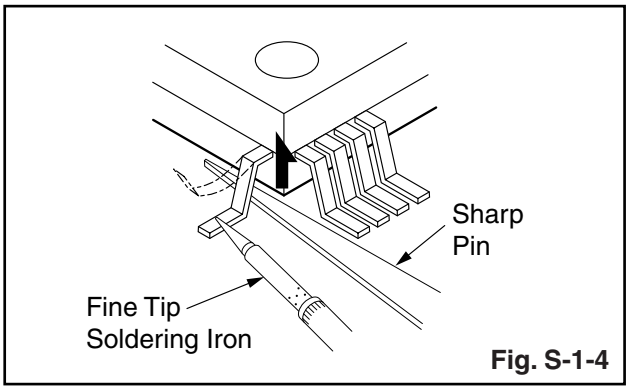


Fig. S-1-4

3. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
4. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

With Iron Wire:

1. Using desoldering braid, remove the solder from all pins of the flat pack-IC. When you use solder flux which is applied to all pins of the flat pack-IC, you can remove it easily. (Fig. S-1-3)
2. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.
3. While heating the pins using a fine tip soldering iron or hot air blower, pull up the wire as the solder melts so as to lift the IC leads from the CBA contact pads as shown in Fig. S-1-5.
4. Bottom of the flat pack-IC is fixed with glue to the CBA; when removing entire flat pack-IC, first apply soldering iron to center of the flat pack-IC and heat up. Then remove (glue will be melted). (Fig. S-1-6)
5. Release the flat pack-IC from the CBA using tweezers. (Fig. S-1-6)

Note: When using a soldering iron, care must be taken to ensure that the flat pack-IC is not being held by glue. When the flat pack-IC is removed from the CBA, handle it gently because it may be damaged if force is applied.

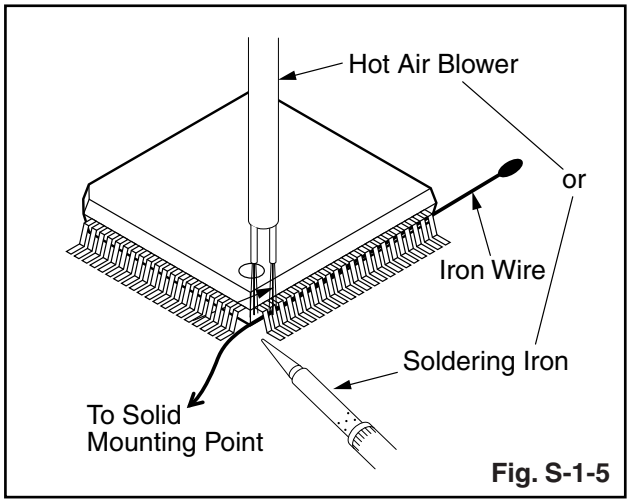


Fig. S-1-5

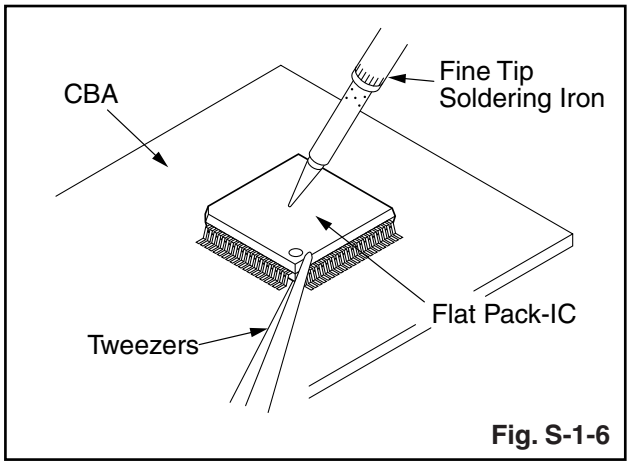


Fig. S-1-6

2. Installation

1. Using desoldering braid, remove the solder from the foil of each pin of the flat pack-IC on the CBA so you can install a replacement flat pack-IC more easily.
2. The "●" mark on the flat pack-IC indicates pin 1. (See Fig. S-1-7.) Be sure this mark matches the 1 on the PCB when positioning for installation. Then presolder the four corners of the flat pack-IC. (See Fig. S-1-8.)
3. Solder all pins of the flat pack-IC. Be sure that none of the pins have solder bridges.

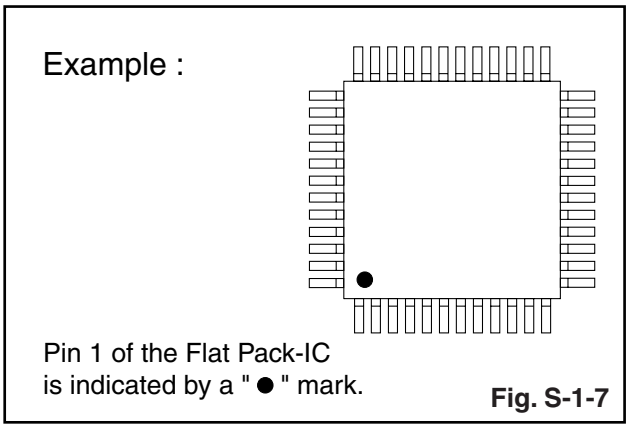


Fig. S-1-7

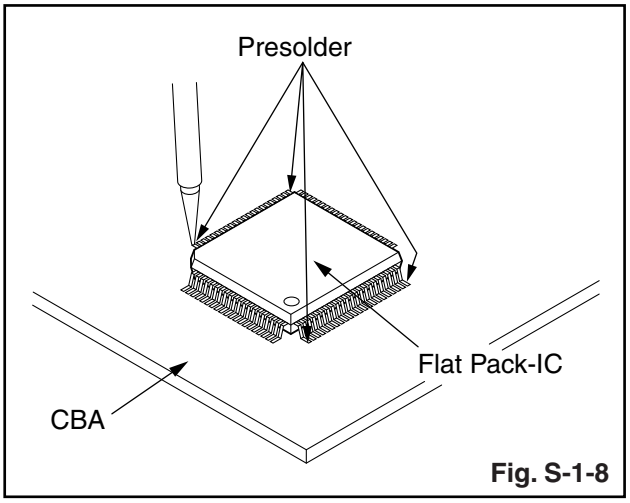


Fig. S-1-8

Instructions for Handling Semi-conductors

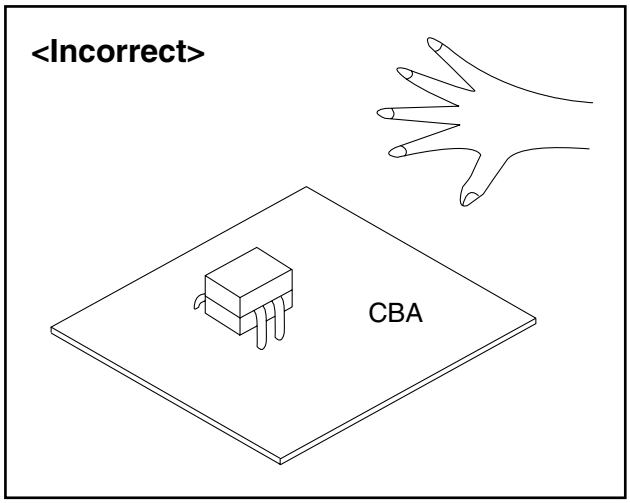
Electrostatic breakdown of the semi-conductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

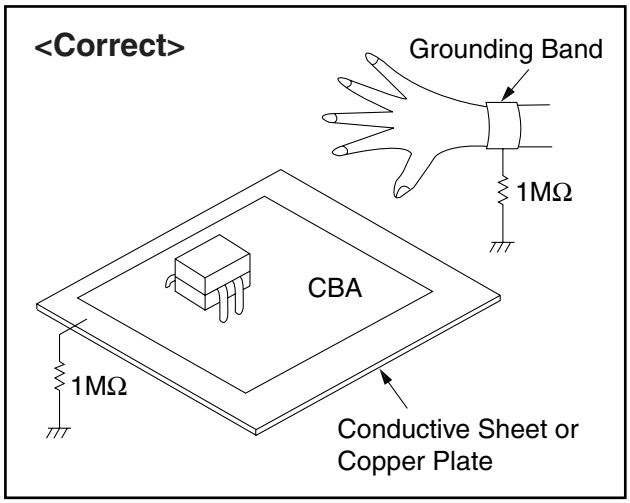
1. Ground for Human Body

Be sure to wear a grounding band (1 MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

2. Ground for Workbench

Be sure to place a conductive sheet or copper plate with proper grounding (1 MΩ) on the workbench or other surface, where the semi-conductors are to be placed. Because the static electricity charge on clothing will not escape through the body grounding band, be careful to avoid contacting semi-conductors with your clothing.

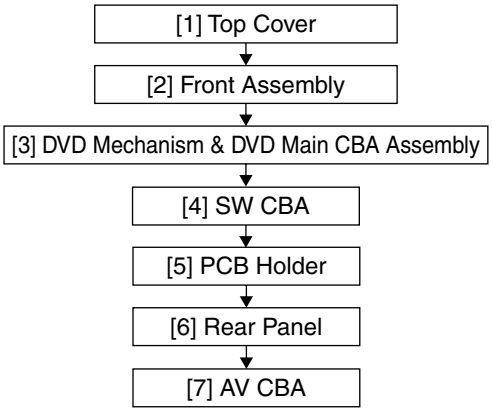




CABINET DISASSEMBLY INSTRUCTIONS

1. Disassembly Flowchart

This flowchart indicates the disassembly steps to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route, and dress the cables as they were originally.



2. Disassembly Method

ID/ Loc. No.	Part	Removal		
		Fig. No.	Remove/*Unhook/ Unlock/Release/ Unplug/Desolder	Note
[1]	Top Cover	D1	7(S-1)	---
[2]	Front Assembly	D2	*6(L-1), *3(L-2)	1
[3]	DVD Mechanism & DVD Main CBA Assembly	D3	4(S-2), *CN101, *CN701, Locking Card Spacers, Main Sheet	---
[4]	SW CBA	D4	(S-3), S Earth Plate, Desolder	---
[5]	PCB Holder	D4	2(S-4)	---
[6]	Rear Panel	D5	2(S-5), 6(S-6)	---
[7]	AV CBA	D5	3(S-7)	---
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)

Note:

(1) Identification (location) No. of parts in the figures

(2) Name of the part

(3) Figure Number for reference

(4) Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P = Spring, L = Locking Tab, S = Screw,
CN = Connector
* = Unhook, Unlock, Release, Unplug, or Desolder
e.g. 2(S-2) = two Screws (S-2),
2(L-2) = two Locking Tabs (L-2)

(5) Refer to “Reference Notes.”

Reference Notes

1. **CAUTION 1:** Locking Tabs (L-1) and (L-2) are fragile. Be careful not to break them.

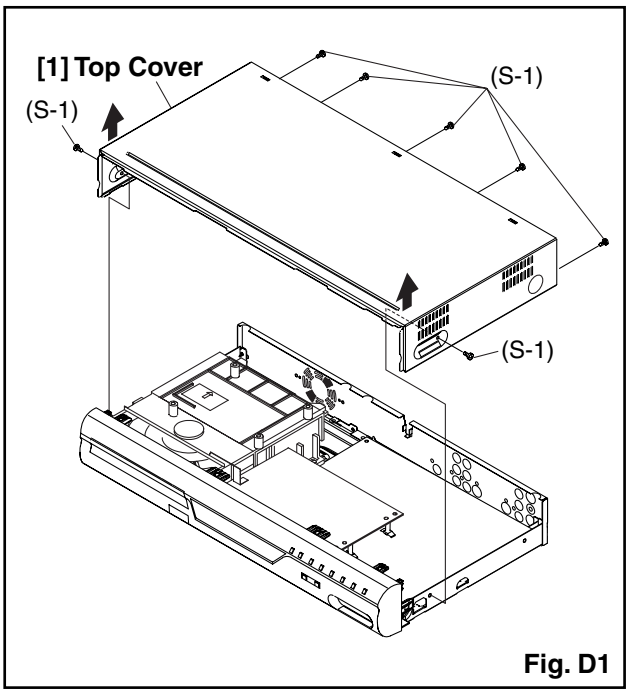


Fig. D1

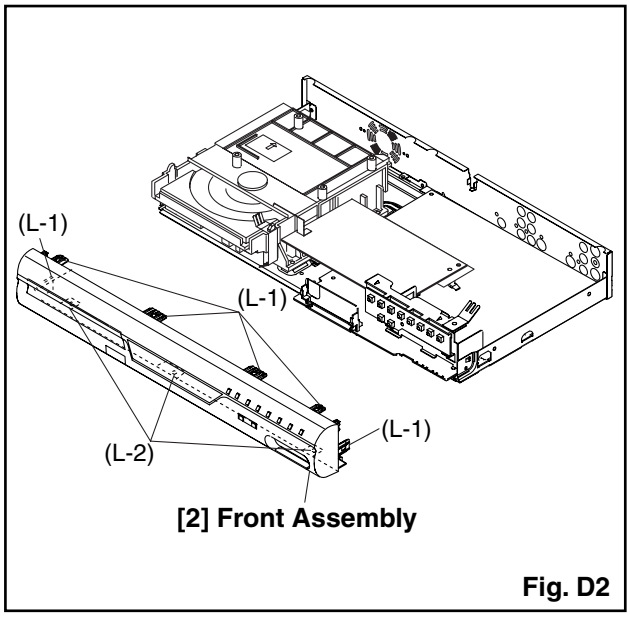


Fig. D2

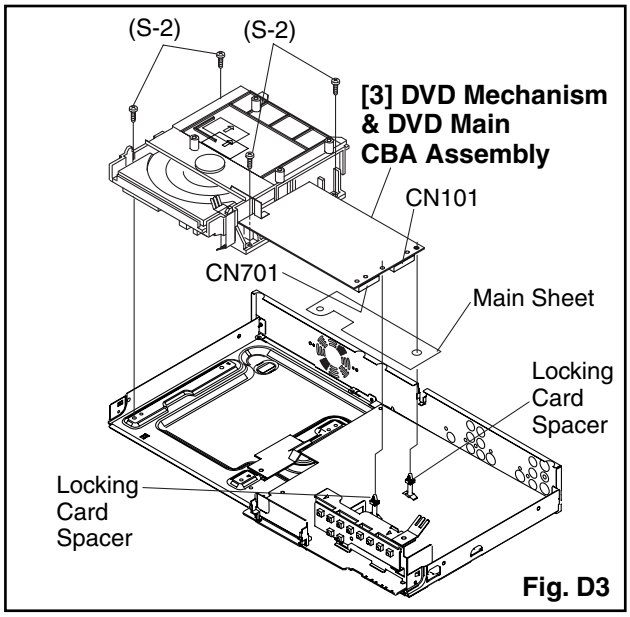


Fig. D3

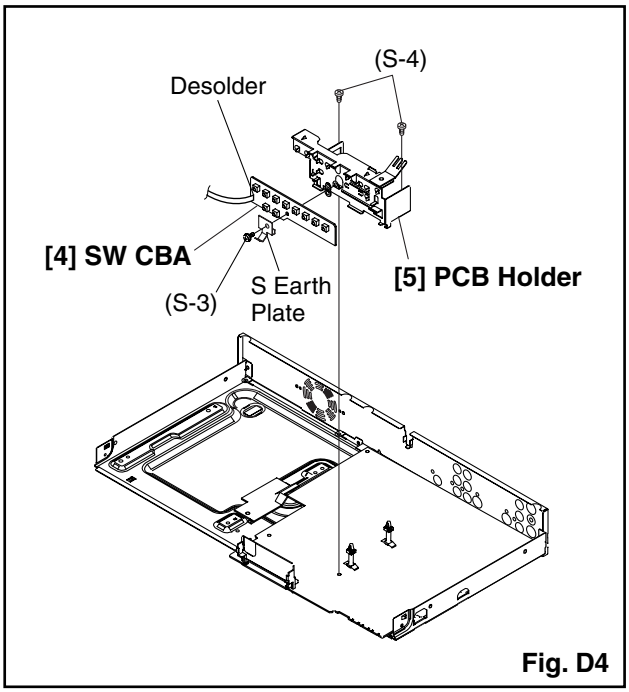


Fig. D4

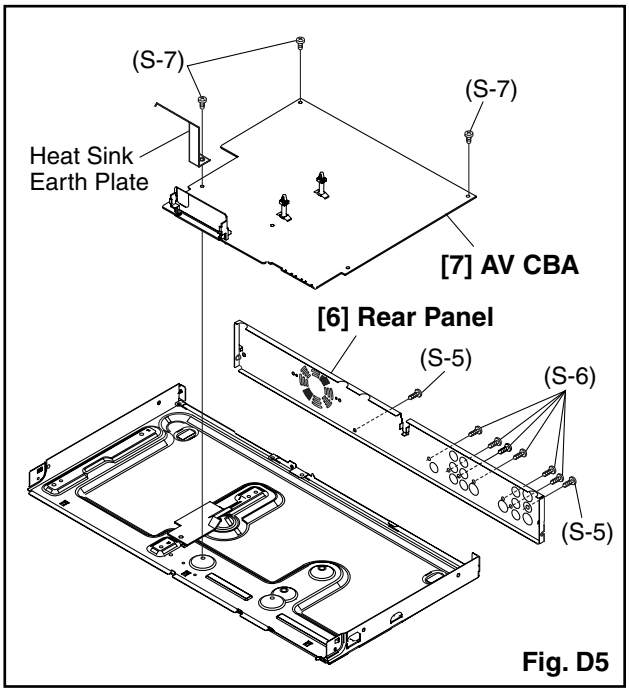
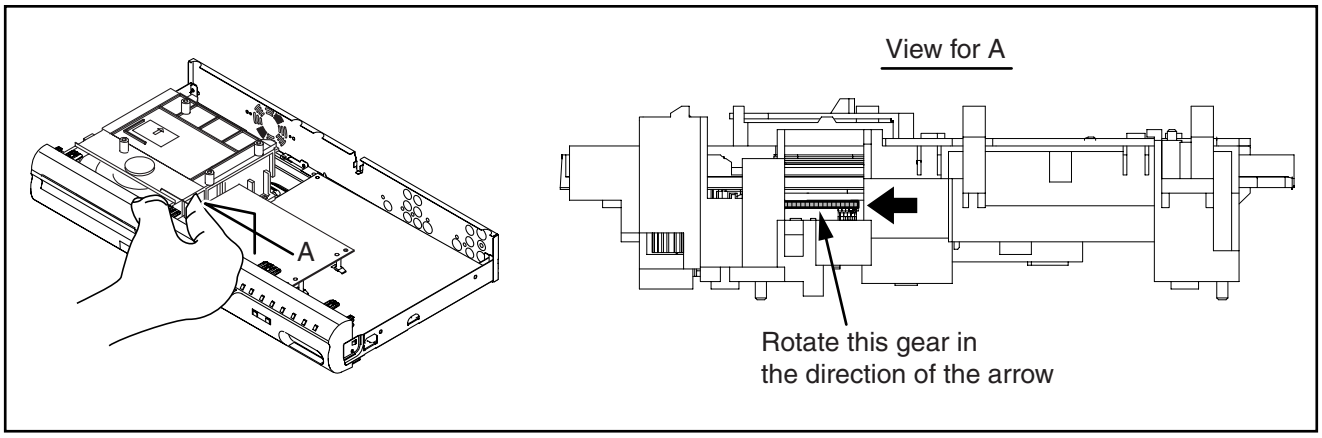


Fig. D5

3. How to Eject Manually

Note: When rotating the gear, be careful not to damage the gear.

1. Remove the Top Cover.
2. Rotate the gear in the direction of the arrow manually as shown below until the tray descends.
3. Pull the tray out manually and remove a disc.



HOW TO INITIALIZE THE DVD RECORDER

To put the program back at the factory-default, initialize the DVD recorder as the following procedure.

1. Turn the DVD recorder on.
2. Confirm that no disc is loaded or that the disc tray is open. To put the DVD recorder into the Version display mode, press [CM SKIP], [1], [2], and [3] buttons on the remote control in the order. Fig. a appears on the screen.

*1: "*******" differs depending on the models.
*2: Firmware Version differs depending on the models, and this indication is one example.

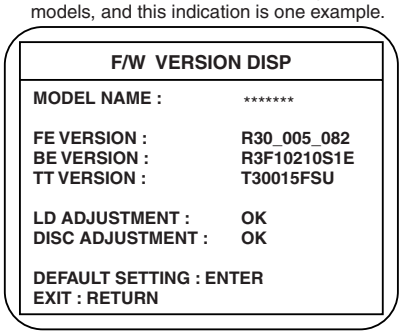


Fig. a Version Display Mode Screen

3. Press [ENTER] button, then the DVD recorder starts initializing. When the initializing is completed, the DVD recorder exits the Version display mode and turns off the power automatically.
   * To move into the Normal mode from the Version display mode, press [RETURN] button on the remote control instead of [ENTER] button.
   * When [POWER] button is pressed before [ENTER] button is pressed, the DVD recorder exits the Version display mode, then the power turns off.

FIRMWARE RENEWAL MODE

1. Turn the power on and remove the disc on the tray.
2. To put the DVD recorder into version up mode, press [CM SKIP], [6], [5], and [4] buttons on the remote control unit in the order. Then the tray will open automatically.
   Fig. a appears on the screen and Fig. b appears on the VFD.

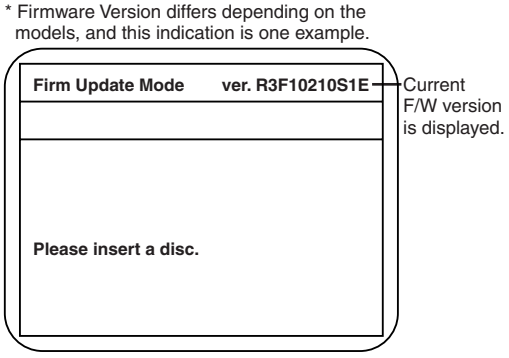

* Firmware Version differs depending on the models, and this indication is one example.
Firm Update Mode ver. R3F10210S1E
Current F/W version is displayed.
Please insert a disc.

Fig. a Version Up Mode Screen

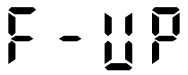


Fig. b VFD in Version Up Mode

3. Load the disc for version up.
   Fig. c appears on the screen. The file on the top is highlighted as the default.
   When there is only one file to exist, Step 4 will start automatically.

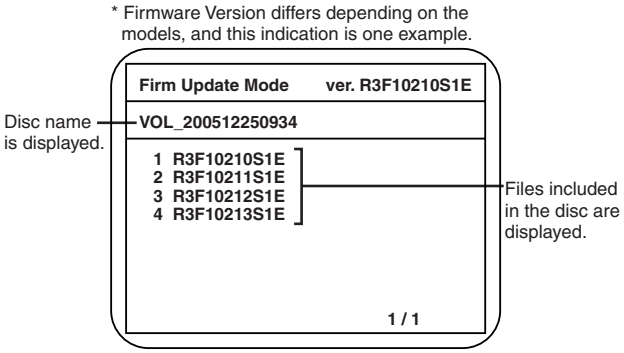

* Firmware Version differs depending on the models, and this indication is one example.
Firm Update Mode ver. R3F10210S1E
Disc name is displayed.
VOL_200512250934
1 R3F10210S1E
2 R3F10211S1E
3 R3F10212S1E
4 R3F10213S1E
Files included in the disc are displayed.
1 / 1

Fig. c Update Disc Screen

4. Select the firmware version pressing arrow buttons, then press [ENTER].
   Fig. d appears on the screen and Fig. e appears on the VFD. The DVD recorder starts updating.

   About VFD indication of Fig. e:

   1) When Fig. d is displayed on the screen, “F-UP” is displayed on the VFD.
   2) When “Firmware Updating... XX% Complete.” is displayed on the screen, “10210” is displayed on the VFD.

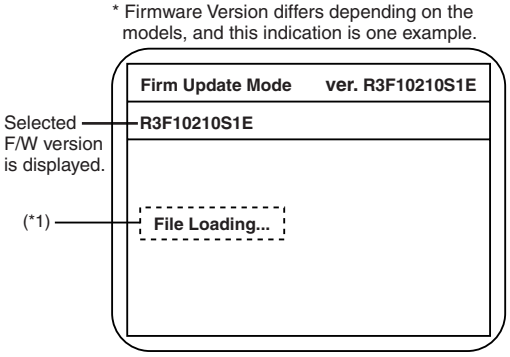

* Firmware Version differs depending on the models, and this indication is one example.
Firm Update Mode ver. R3F10210S1E
Selected F/W version is displayed.
R3F10210S1E
(*1)
File Loading...

Fig. d Programming Mode Screen

Fig. e VFD in Programming Mode (Example)

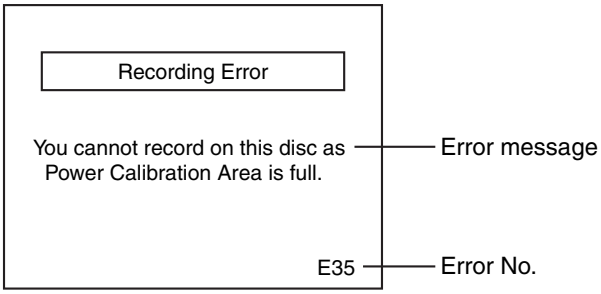
The appearance shown in (*1) of Fig. d is described as follows.

No.	Appearance	State
1	File Loading...	Sending files into the memory
2	Firmware Updating... XX% Complete.	Writing new version data
---	Firmware Update Failure	Failed in updating

5. After updating is finished, the tray opens automatically.
   At this time, no button is available.
6. Pull out the AC code once, then insert it again.

FUNCTION INDICATOR SYMBOLS

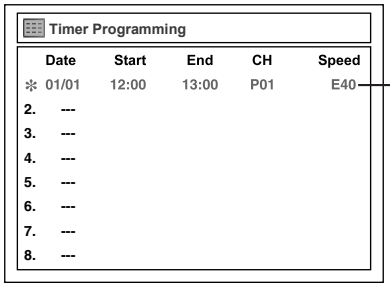
Note: If an error occurs, a message with the error number appears on the screen.



Message	Solution	Error No.	Error Description	Priority
Can not record on this disc.	Insert the recordable disc, and ensure the disc status satisfies the recording requirements.	1	An error occurs during data reading.	-
		2	There is no reply for 15 seconds in Test Unit Ready.	-
		3	Cannot write the data after trying three times.	-
		4	An error occurs with OPC.	-
		5	During recovery in a record.	-
		6	An error occurs even if recovery has been tried three times.	-
		7	An error occurs in a format.	-
		8	It cannot start an encode.	-
		9	NV_PCK/RDI_PCK is not in encoded data.	-
		10	Encode Pause condition continued for 10 minutes.	-
		11	Encode Pause condition continued in normal REC condition for 10 minutes.	-
		12	Difference in the address and can not get StreamID of RDI/VIDEO.	-
		13	It is a reply that “ATAPI is not readable.”	-
		14	Cannot write the data after recovering SMALL VMGI.	-
		15	Cannot write the data after DVD-R Reverse Track.	-
		16	An error occurs in Finalize Close.	-
		17	An error occurs in Rec Stop Close.	-
		18	An error occurs in PCA Full (DVD_R).	-
		19	Safety Stop occurs during editing.	-
		20	High Speed Disc.	2
		21	The disc is not formatted.	5
		22	Disc Error has occurred.	3
		23	The -R Disc of VR Mode.	6
		24	The disc except DVD-R/RW or finalized DVD-R.	1
This program is not allowed to be recorded.	You cannot record copy prohibited programs.	25	During the Macrovision picture input.	11
		26	During the CGMS picture input.	12

Message	Solution	Error No.	Error Description	Priority
This program is not recordable in Video mode.	Set “DVD-RW Recording Format” to “VR mode”.	27	During the CGMS picture (possible to record once) input. (Video Format Disc)	12
This program is not allowed to be recorded on this disc.	Insert a ver.1.1 CPRM compatible DVD-RW disc.	28	During the CGMS picture (possible to record once) input. (Disc which is not for the correspondence to VR Format CPRM)	12
This disc is protected and not recordable.	Release the disc protect setting in the Disc Setting menu.	29	Disc Protected Disc.	7
Disc is full. (No area for new recording)	Insert the recordable disc with enough recording space.	30	No avilable recording space.	5
You cannot record more than 99 titles on one disc. (The maximum is 99.)	Delete unnecessary titles.	31	Its recording capacity has been reached. (Video Format Disc)	7
		32	Its recording capacity has been reached. (VR Format Disc)	8
You cannot record more than 999 chapters on one disc. (The maximum is 999.)	Delete unnecessary chapter markers.	33	The 999 chapter has been reached. (VR Format Disc)	9
You cannot record on this disc as Control Information is full.	Delete unnecessary titles.	34	There is not space to record field of control information.	10
You cannot record on the disc as Power Calibration Area is full.	Insert a new disc.	35	PCA is Full. (in REC start)	4
This disc is already finalized.	Release the finalizing for this disc.	36	It is finalized. (Video Format Disc)	6
Can not record on this disc.	Repeat the same operation.	37	Access to Memory Area range outside.	-
		38	Sector Address is wrong.	-
		39	BUP writing error of chapter editing.	-

If an error occurs during the timer recording, one of the following error numbers (40 to 42) or the above error messages (error number: 1 to 39) is displayed on the recording menu after timer recording.
(Once the screen of the program line is exited, the program line for the error will be cleared.)
(No Error Message is displayed for the error No. 40 ~ 42.)

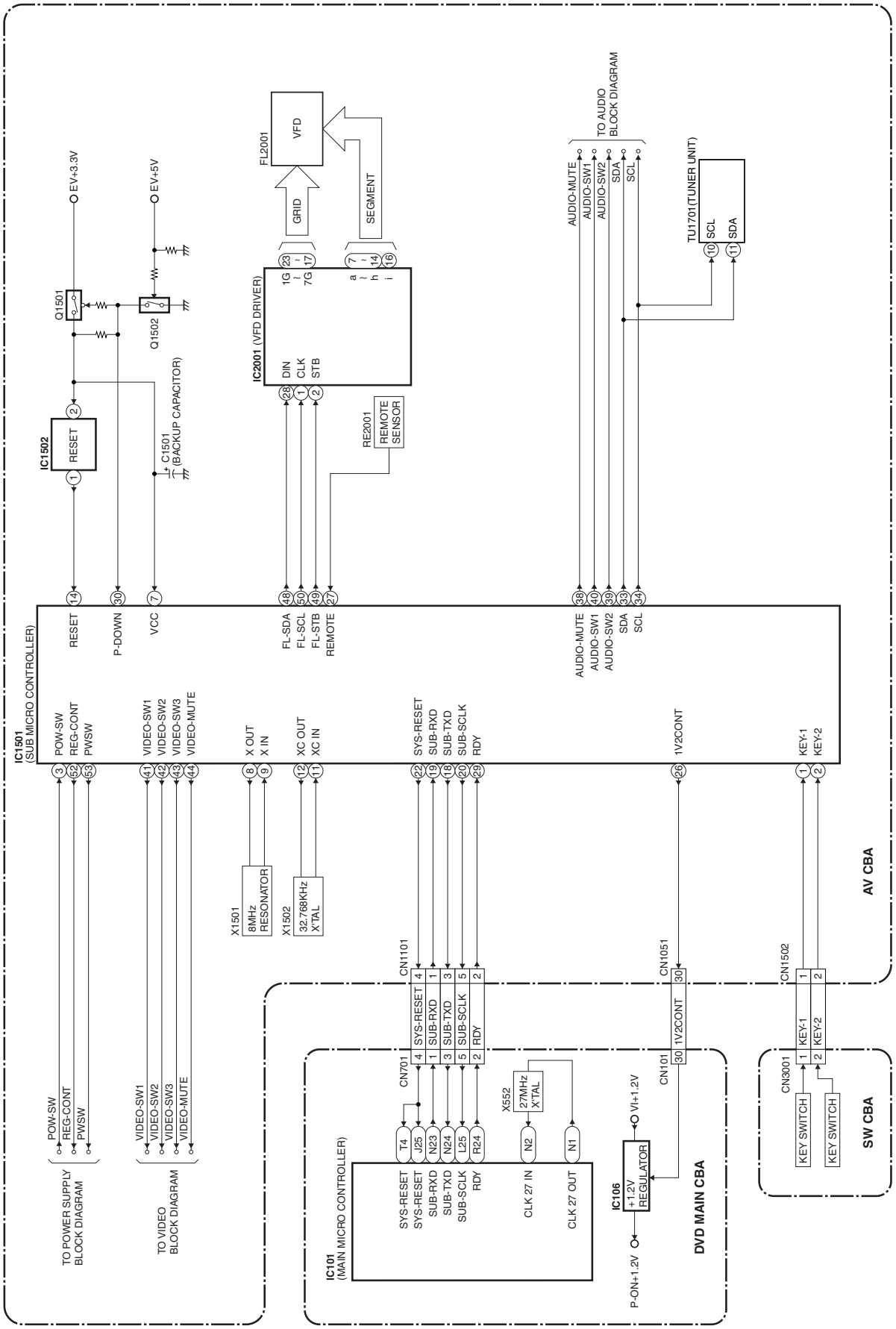


A program with the error number is grayed out and asterisked on the timer programming list.

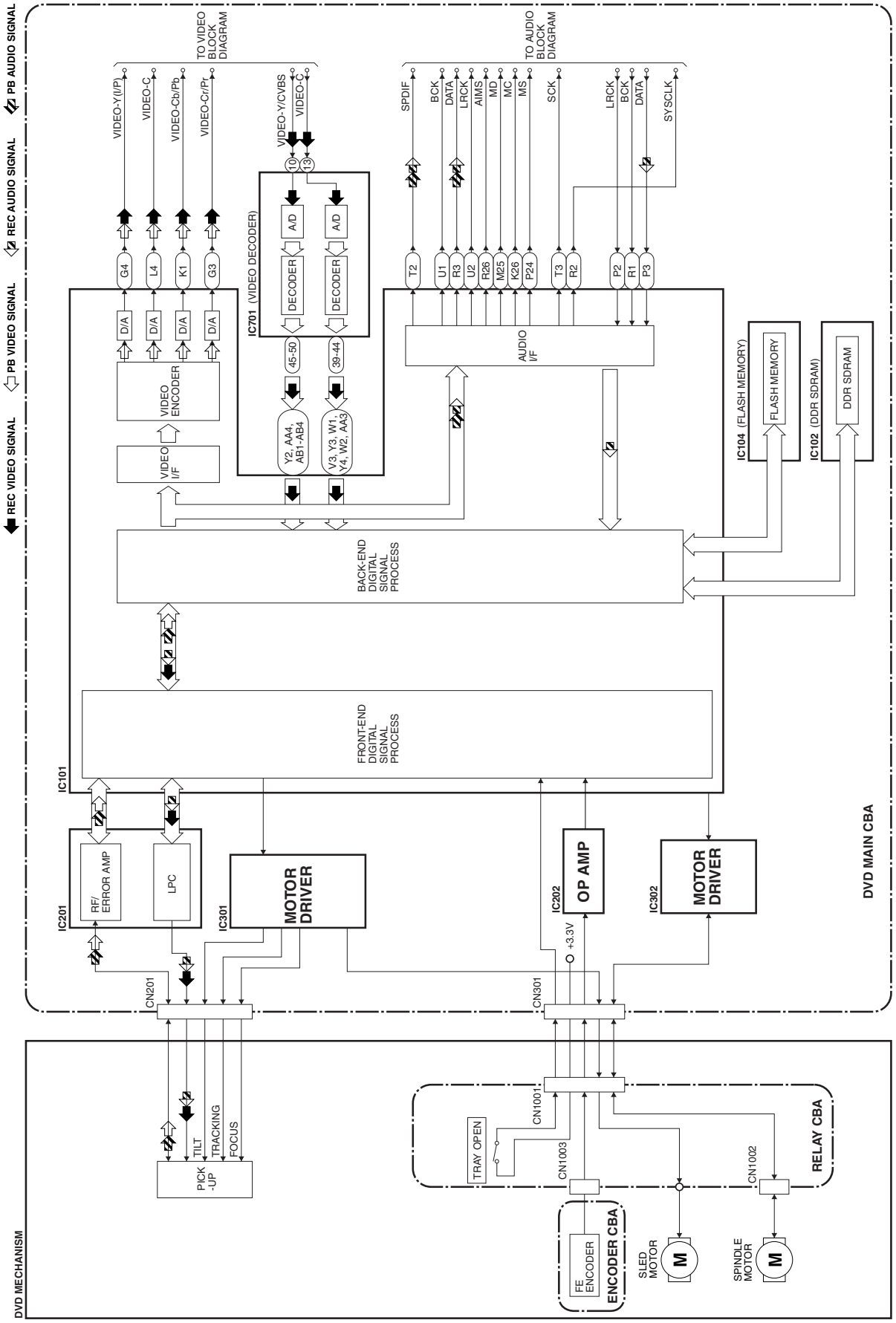
Message	Solution	Error No.	Error Description	Priority
Error message is not displayed.	- Set the timer programming correctly. - Set the timer programming before the start time.	40	- Some portion has not been recorded because of program overlapping. - Recording did not start at the start time.	-
	Turn the power on and set the clock correctly then set timer programming again.	41	Power failed	-
	Insert the recordable disc.	42	No disc when recording	-

BLOCK DIAGRAMS

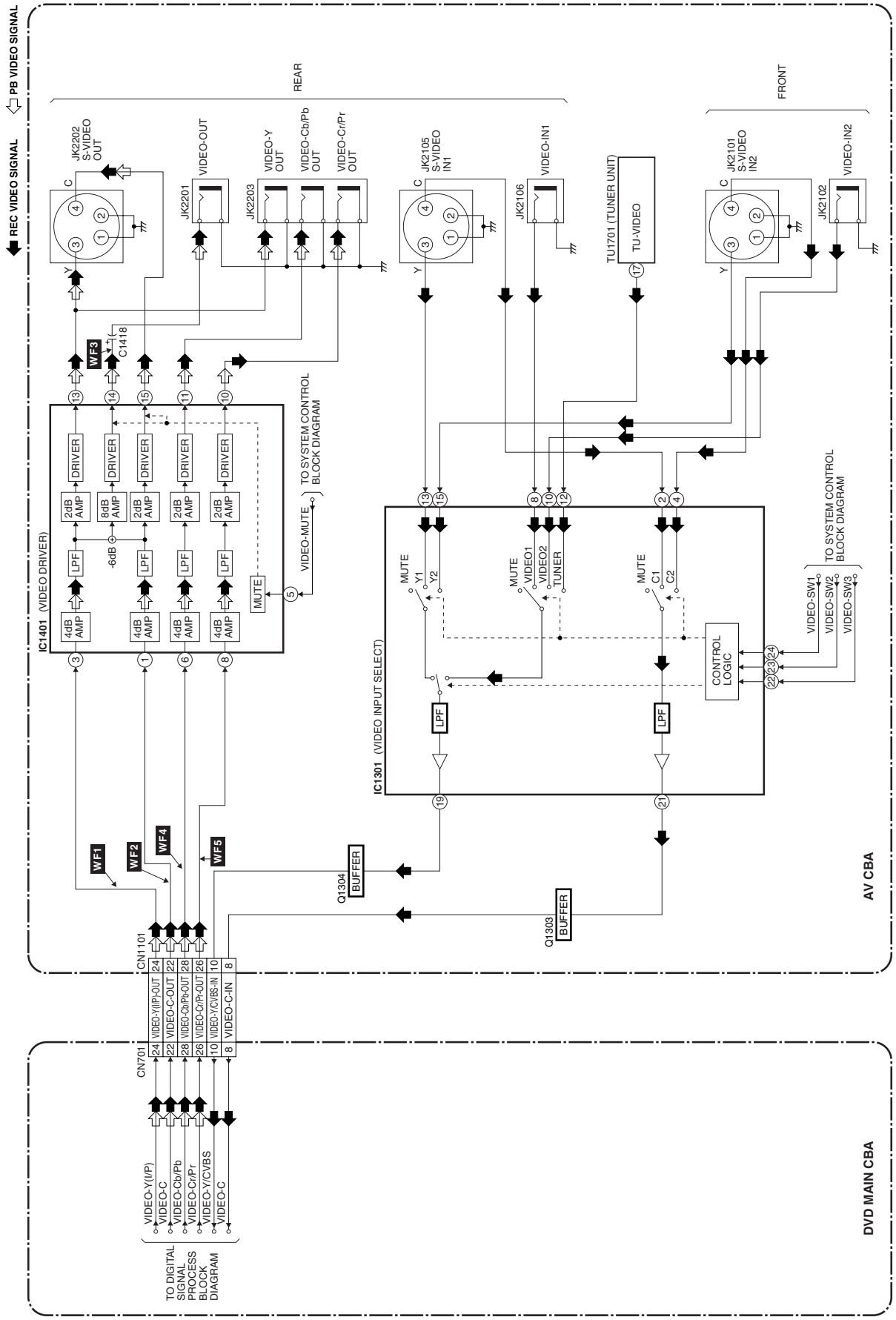
System Control Block Diagram



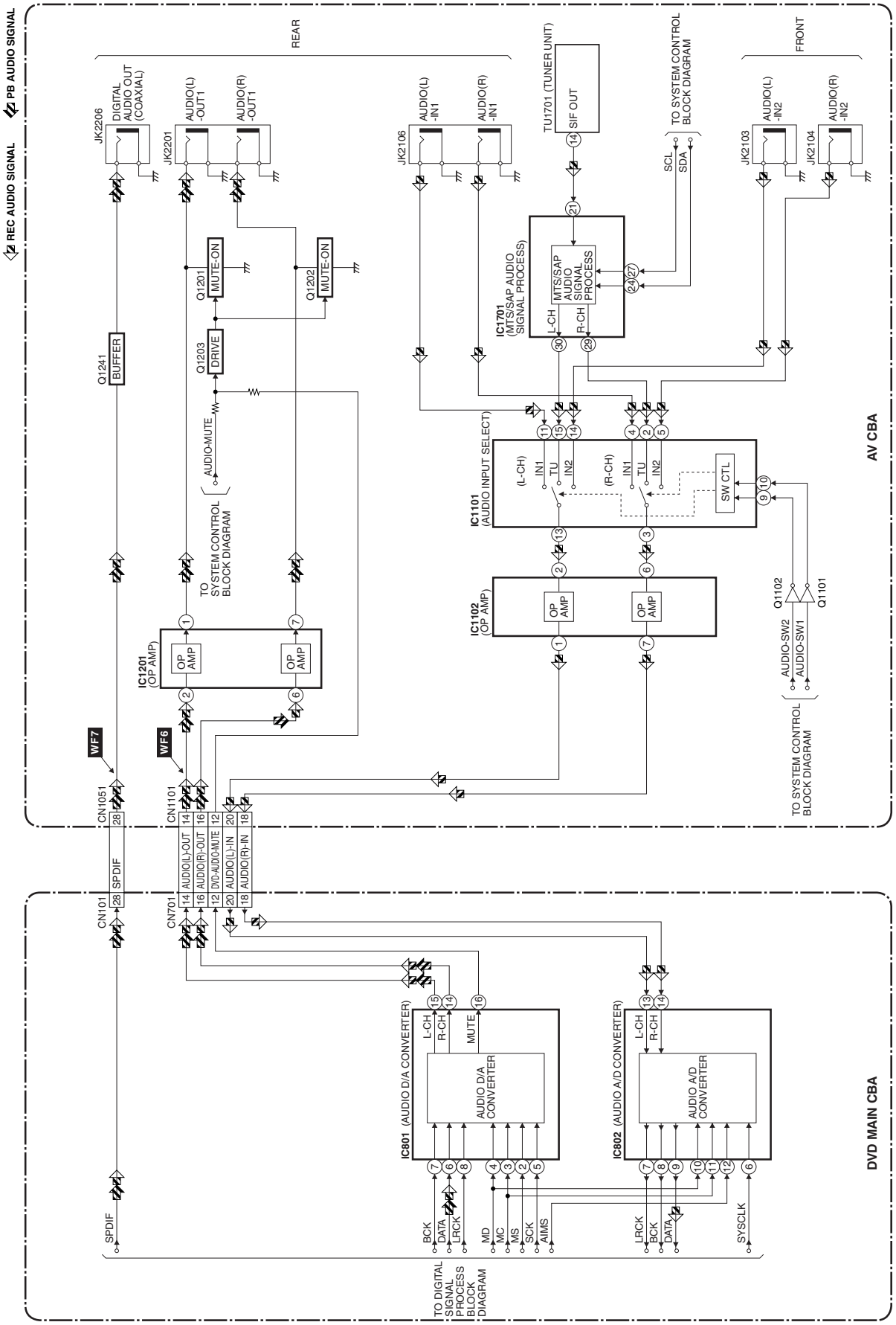
Digital Signal Process Block Diagram



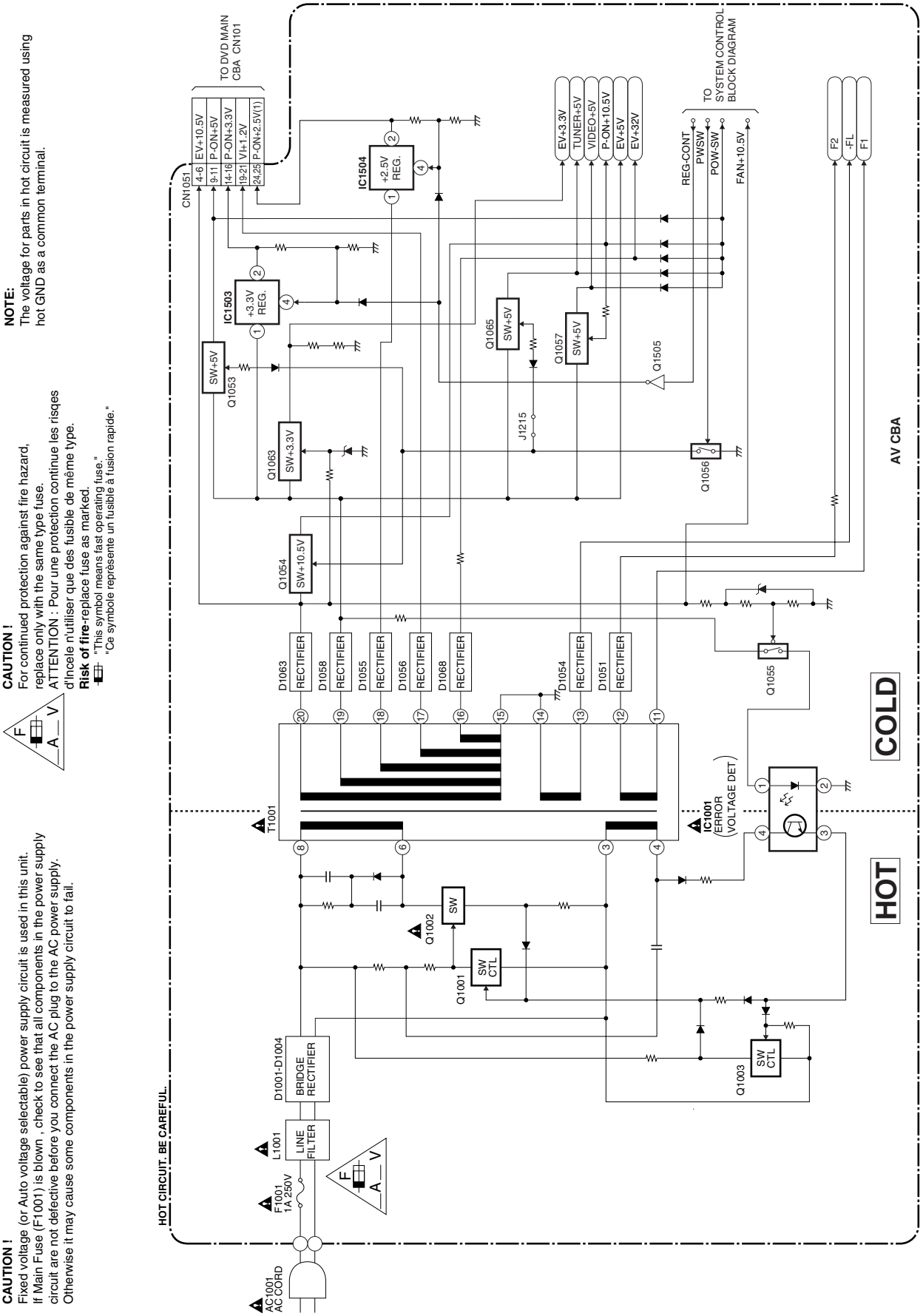
Video Block Diagram



Audio Block Diagram



Power Supply Block Diagram



CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

CAUTION !
For continued protection against fire hazard, replace only with the same type fuse.
ATTENTION : Pour une protection continue les risques d'Incele n'utiliser que des fusible de même type.
Risk of fire-replace fuse as marked.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

WARNING

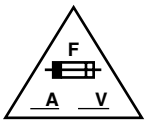
Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark "⚠" in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Notes:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K = 10^3$, $M = 10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF ($P = 10^{-6}$ μF).
5. All voltages are DC voltages unless otherwise specified.

LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. CAUTION:



FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE.
ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQES D'INCELE N'UTILISER QUE DES FUSIBLE DE MÊME TYPE.
RISK OF FIRE-REPLACE FUSE AS MARKED.

This symbol means fast operating fuse.
Ce symbole reprèsente un fusible à fusion rapide.

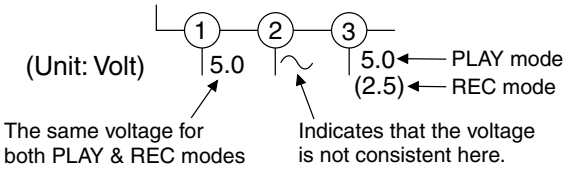
2. CAUTION:

Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

3. Note:

1. Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.
2. To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

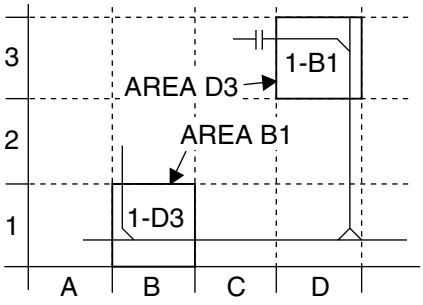
4. Voltage indications for PLAY and REC mode on the schematics are as shown below:



5. How to read converged lines

1-D3
- Distinction Area
- Line Number (1 to 3 digits)

Examples:
1. "1-D3" means that line number "1" goes to the line number "1" of the area "D3".
2. "1-B1" means that line number "1" goes to the line number "1" of the area "B1".



6. Test Point Information

: Indicates a test point with a jumper wire across a hole in the PCB.

: Used to indicate a test point with a component lead on foil side.

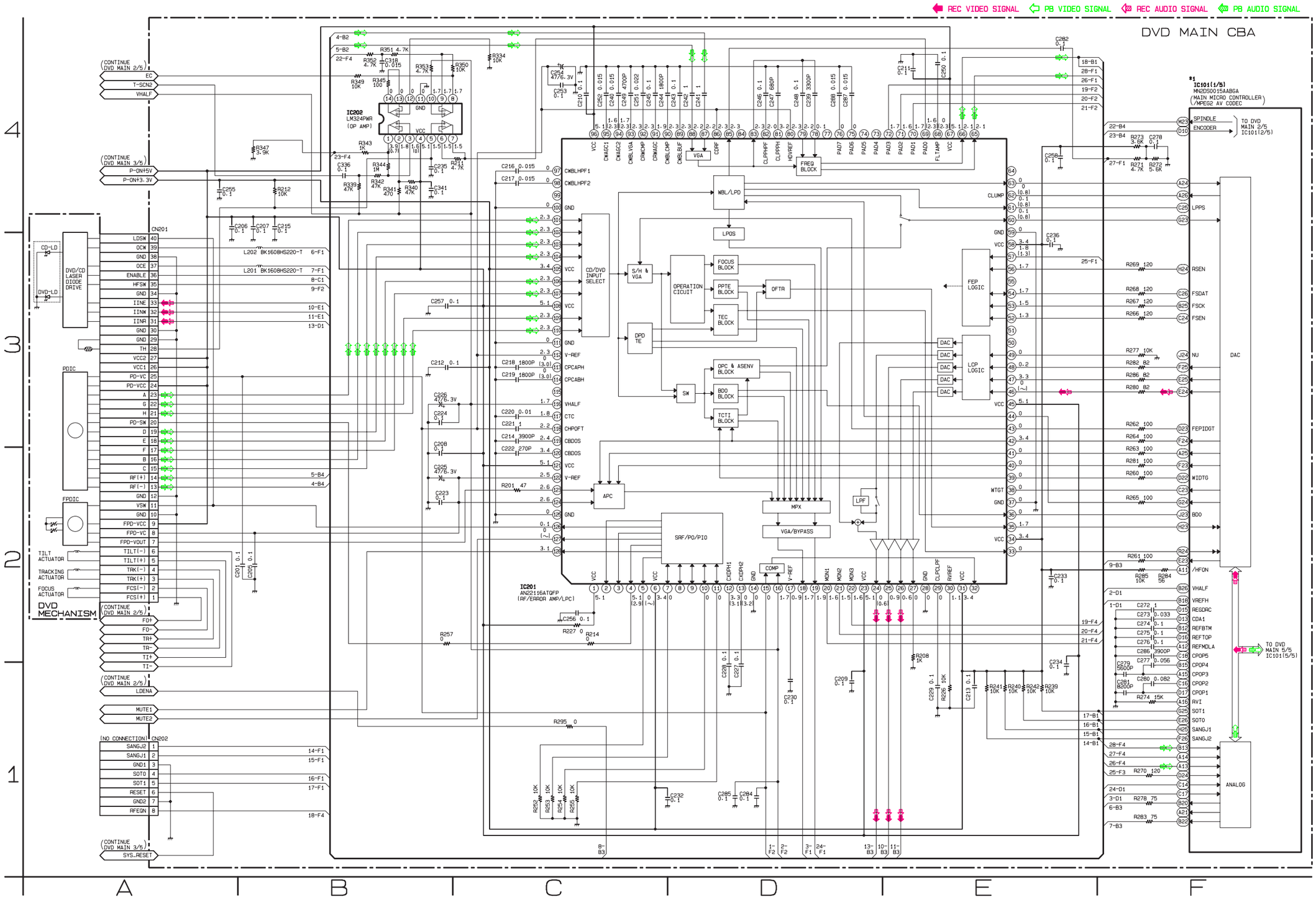
: Used to indicate a test point with no test pin.

: Used to indicate a test point with a test pin.

DVD Main 1/5 Schematic Diagram

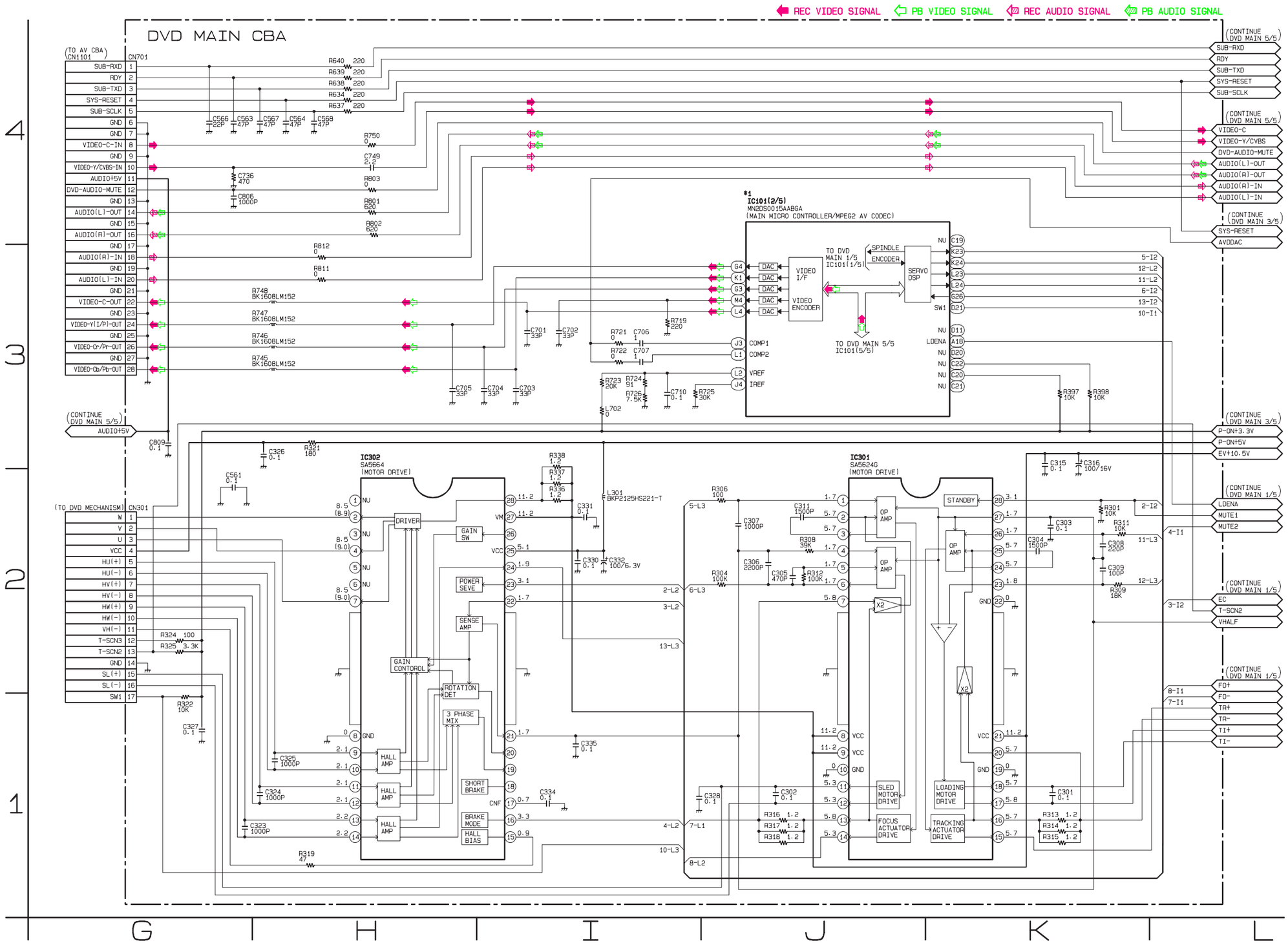
NOTE:

1. The order of pins shown in this diagram is different from that of actual IC101.
2. IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section.



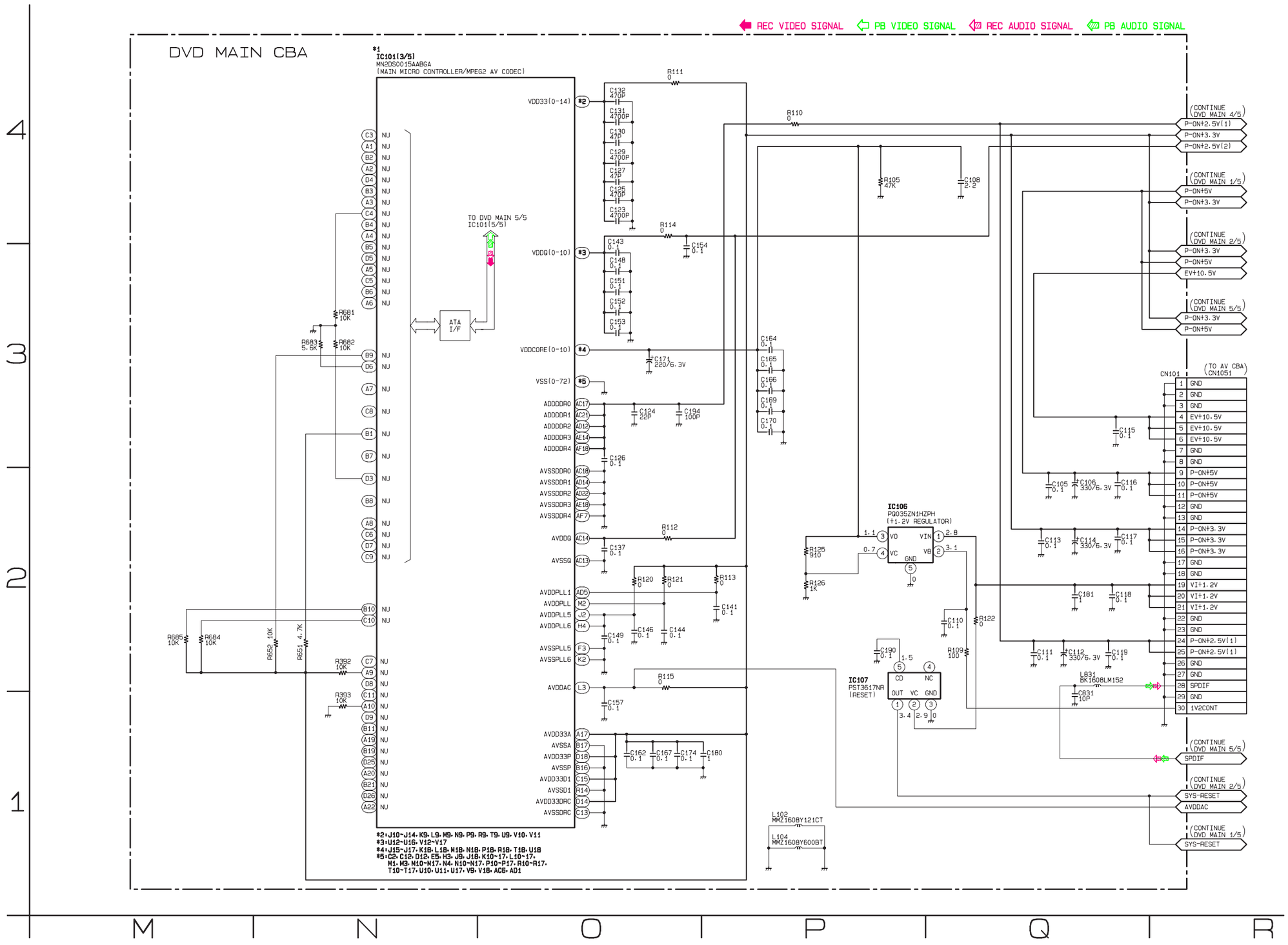
DVD Main 2/5 Schematic Diagram

NOTE:
1. The order of pins shown in this diagram is different from that of actual IC101.
2. IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section.



DVD Main 3/5 Schematic Diagram

NOTE:
1. The order of pins shown in this diagram is different from that of actual IC101.
2. IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section.

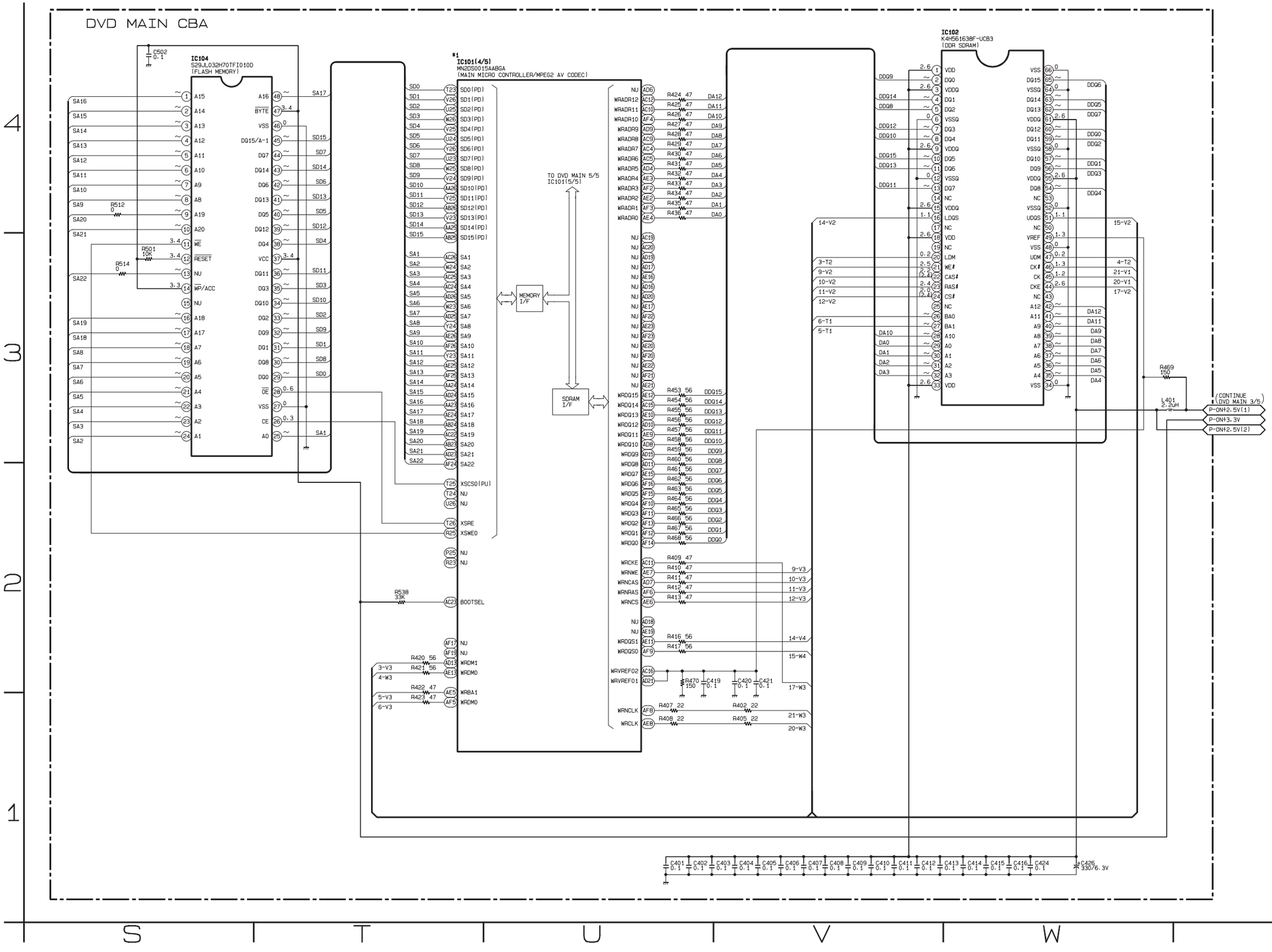


E7A01SCD3

DVD Main 4/5 Schematic Diagram

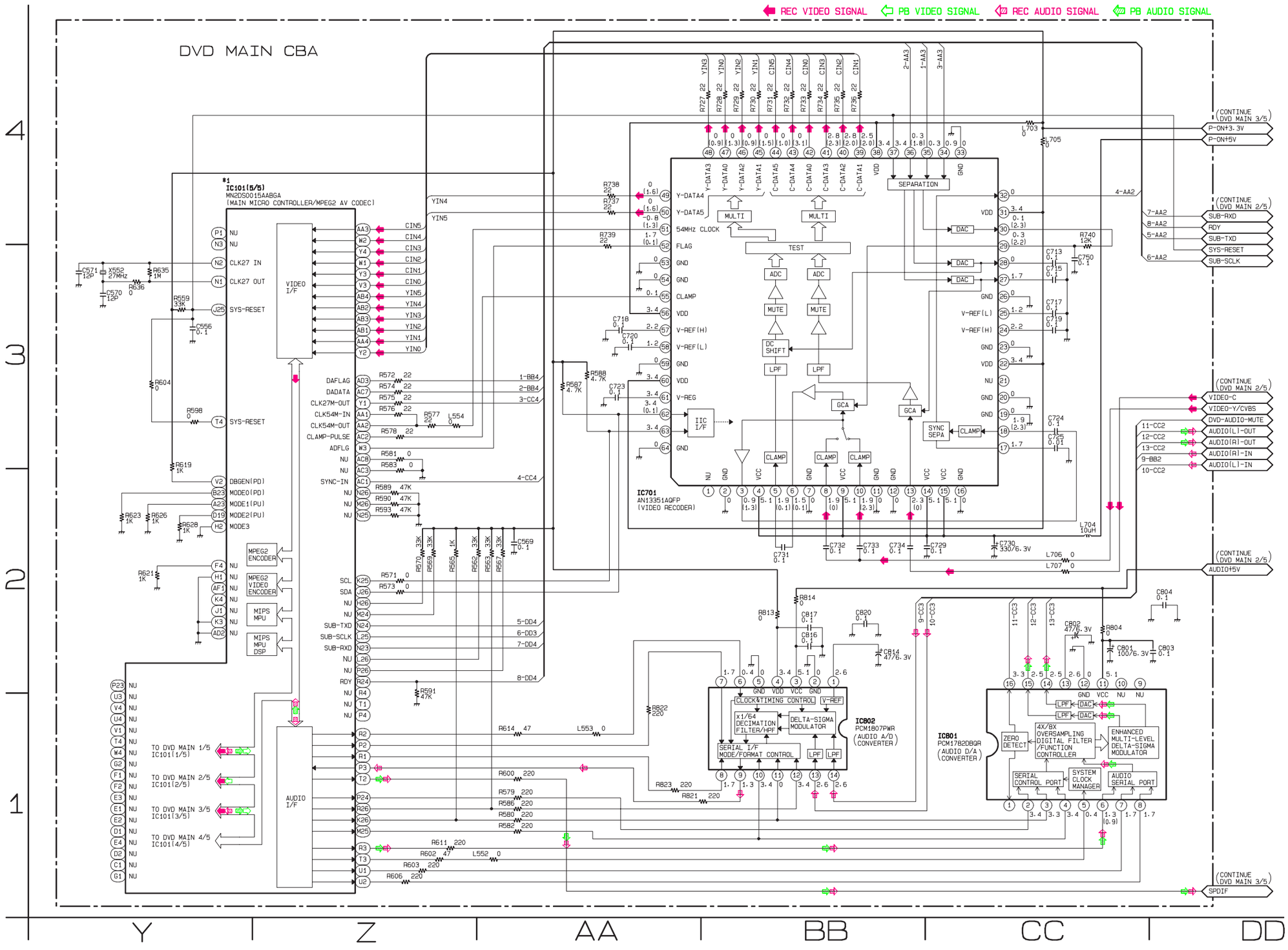
NOTE:

1. The order of pins shown in this diagram is different from that of actual IC101.
2. IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section.



DVD Main 5/5 Schematic Diagram

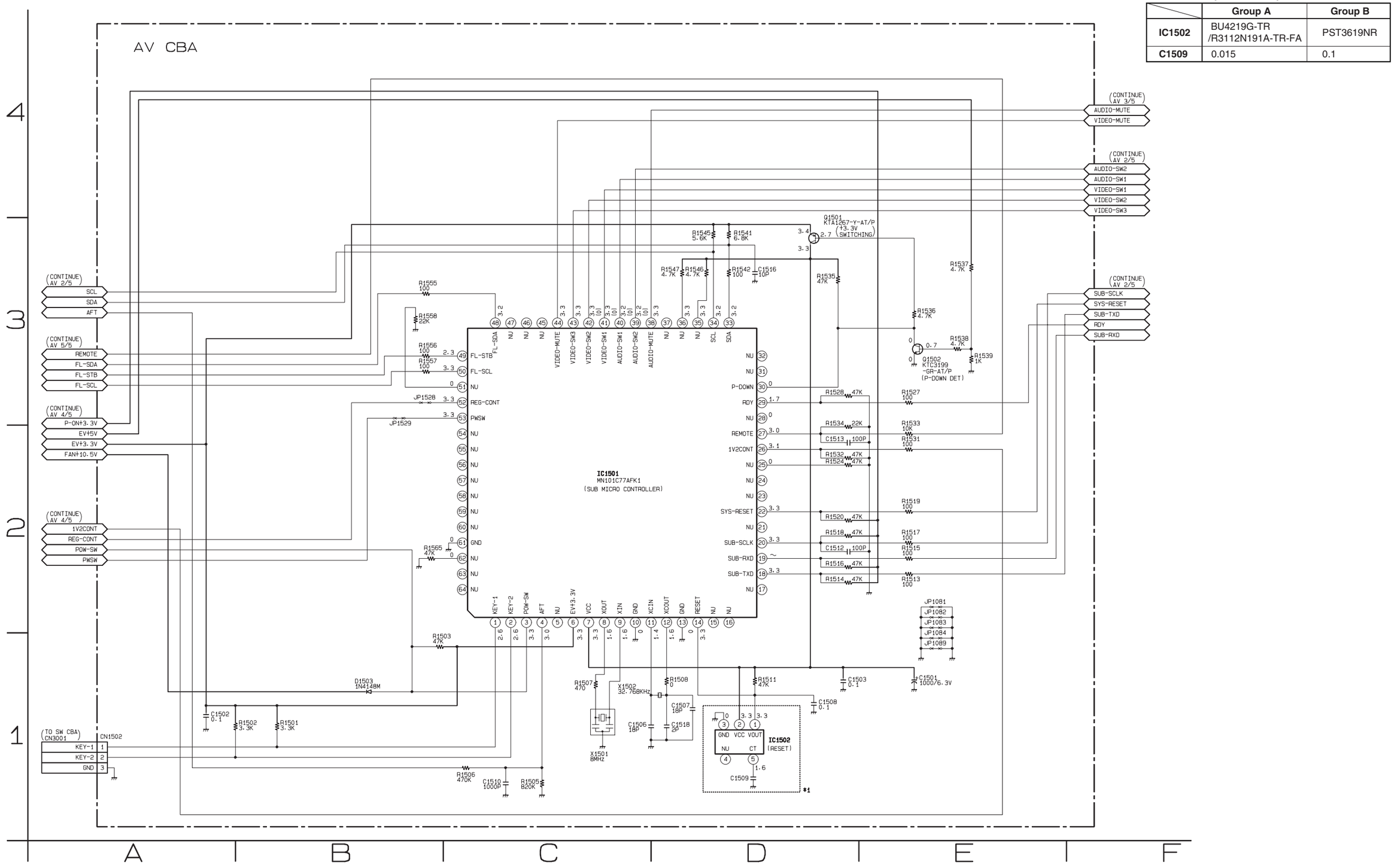
NOTE:
1. The order of pins shown in this diagram is different from that of actual IC101.
2. IC101 is divided into five and shown as IC101 (1/5) ~ IC101 (5/5) in this DVD Main Schematic Diagram Section.



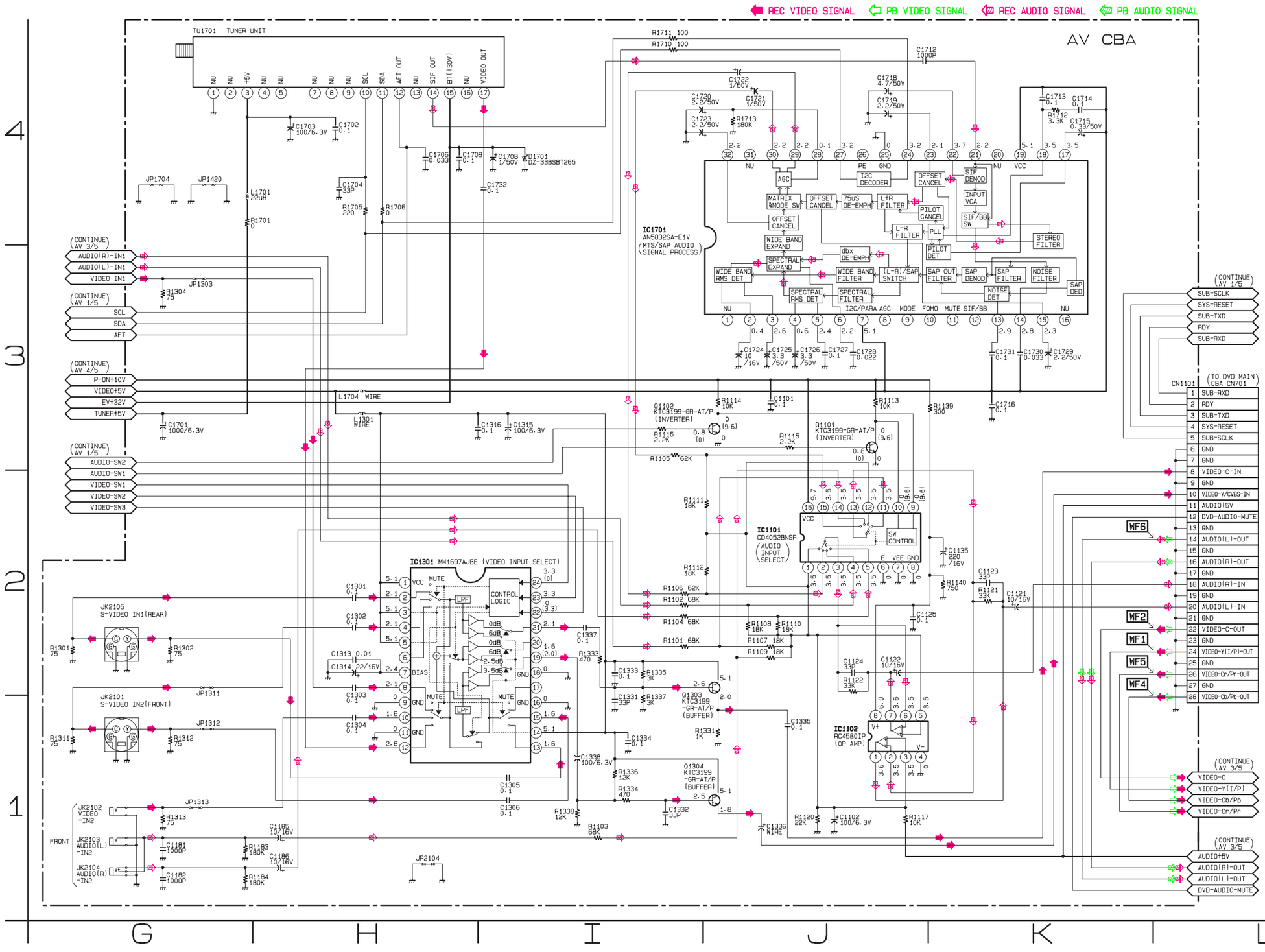
AV 1/5 Schematic Diagram

***1 NOTE**
These components (IC1502, C1509) can be used in any models. However, you cannot mix components under Group A with the ones under Group B. You can choose either Group. The difference between Group A and Group B is shown below.

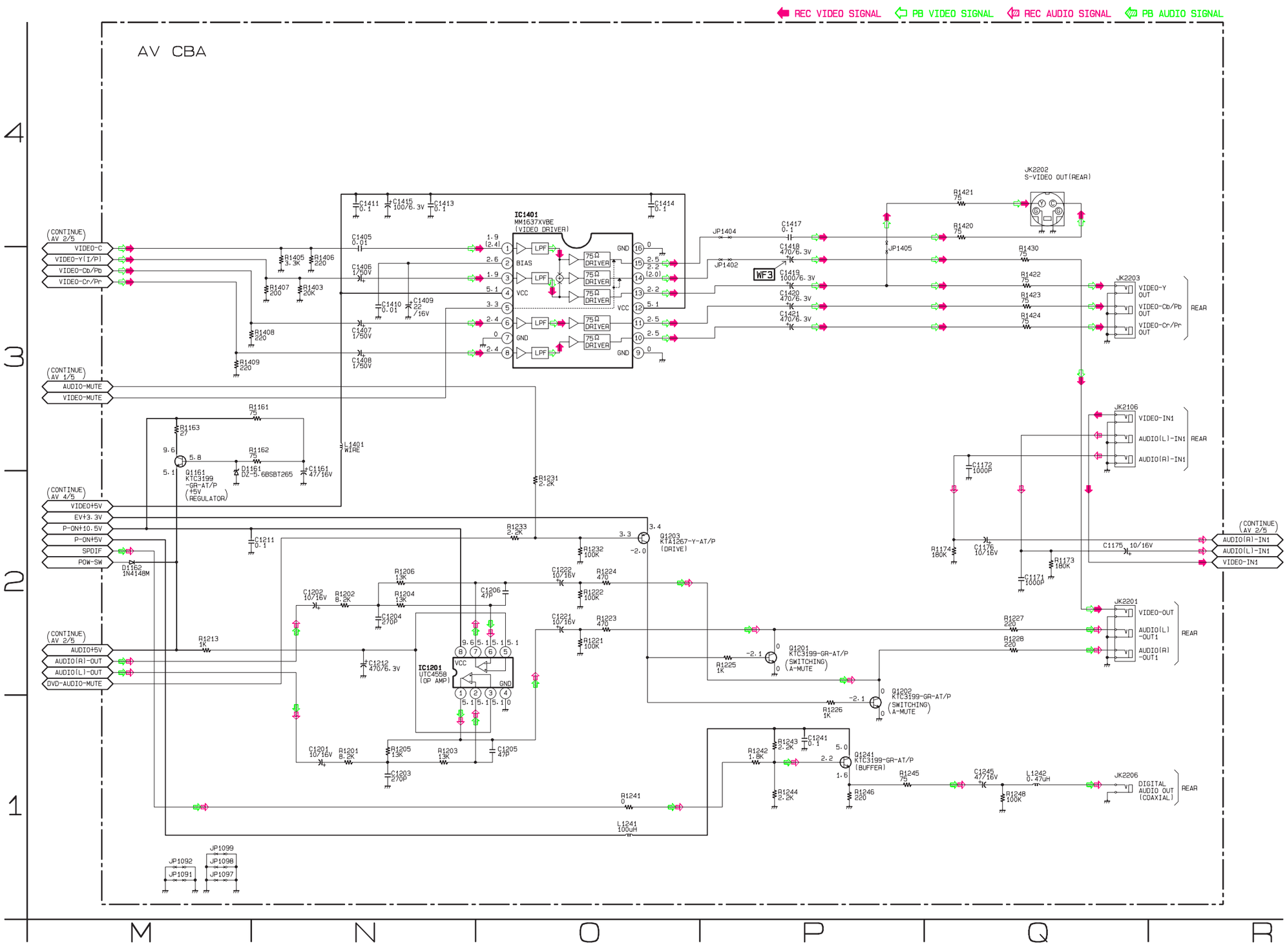
	Group A	Group B
IC1502	BU4219G-TR /R3112N191A-TR-FA	PST3619NR
C1509	0.015	0.1



AV 2/5 Schematic Diagram



AV 3/5 Schematic Diagram

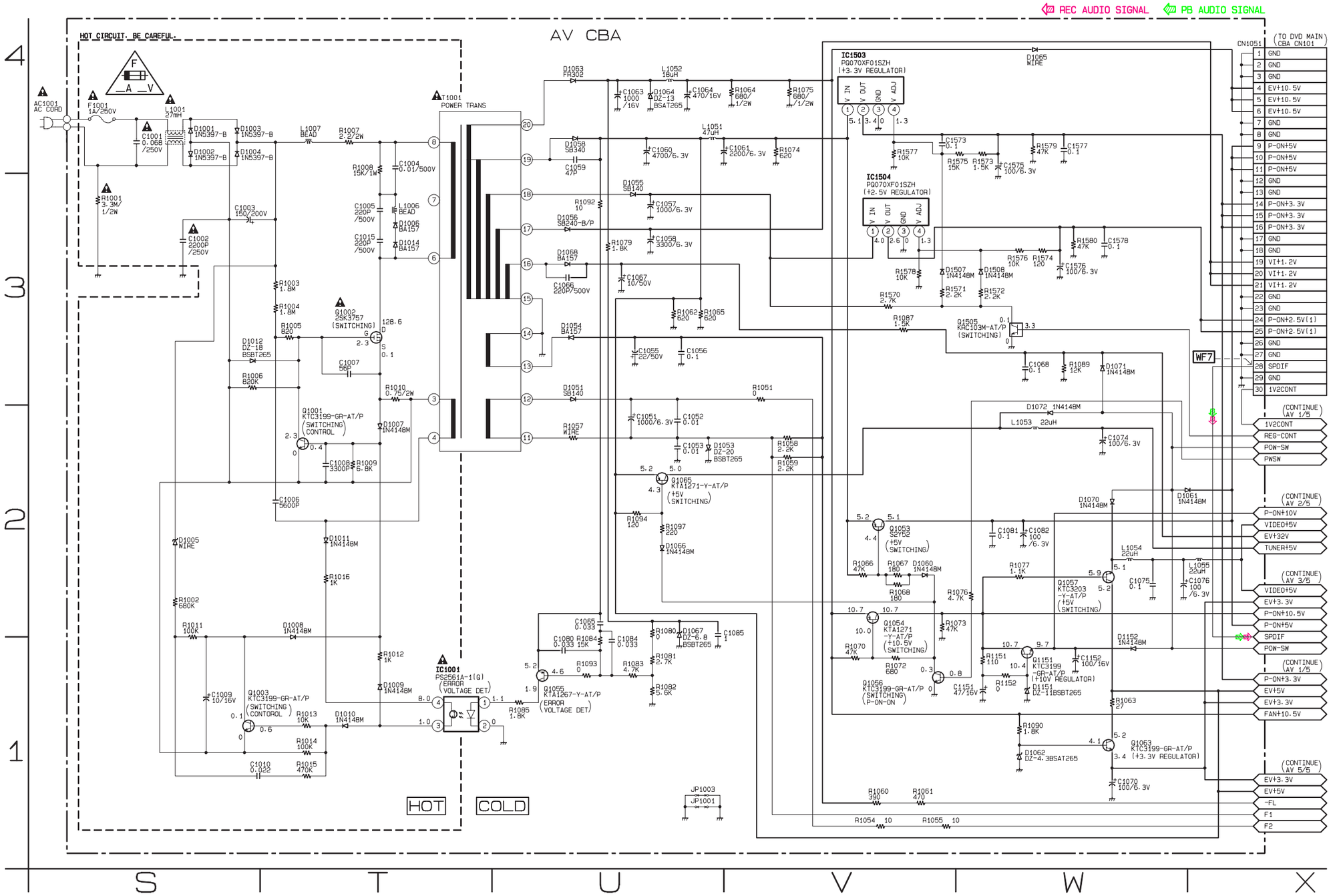


AV 4/5 Schematic Diagram

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

CAUTION !
For continued protection against fire hazard,
replace only with the same type fuse.
ATTENTION : Pour une protection continue les risqes d'Incele n'utiliser que des fusible de même type.
Risk of fire-replace fuse as marked.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

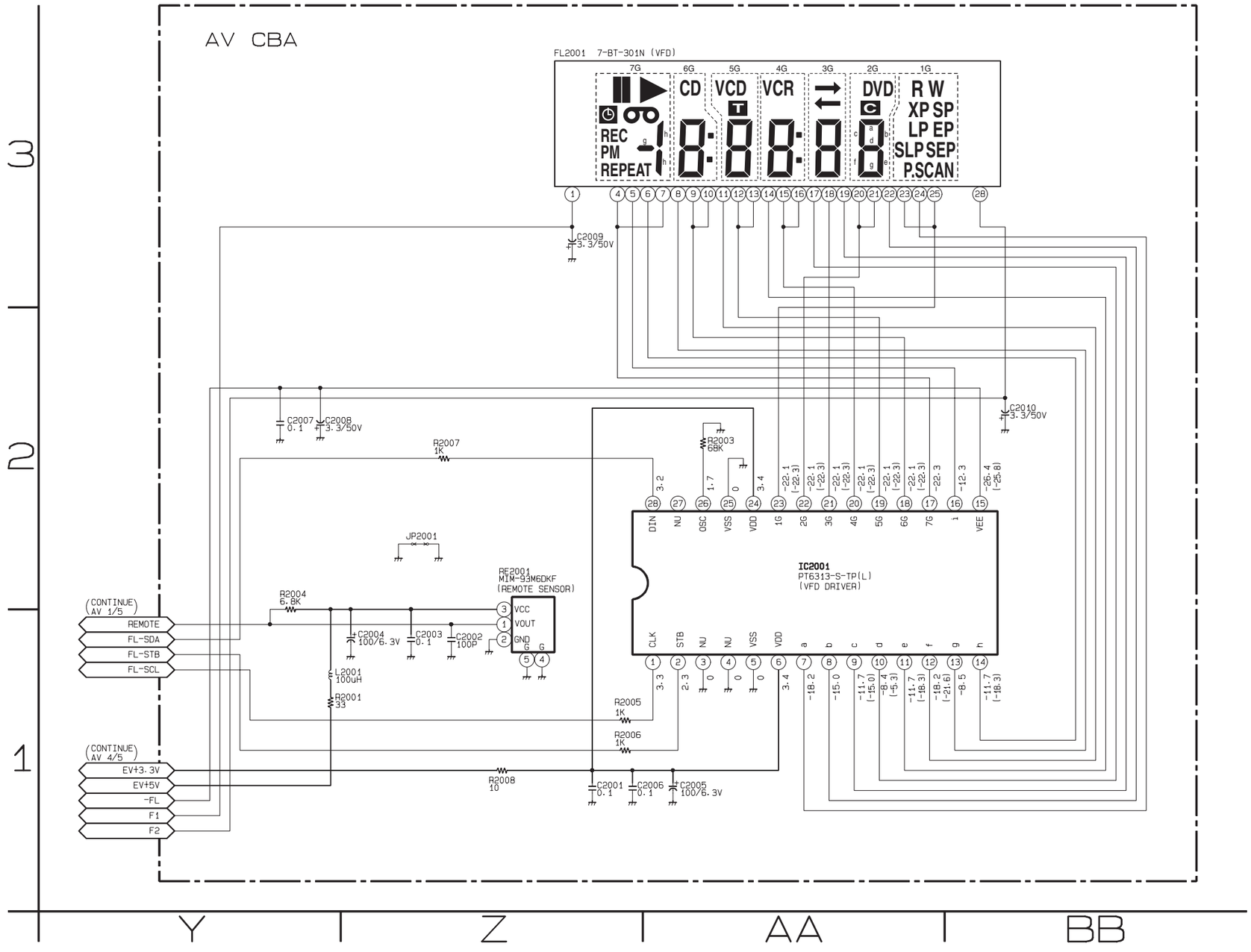


E7A01SCAV4

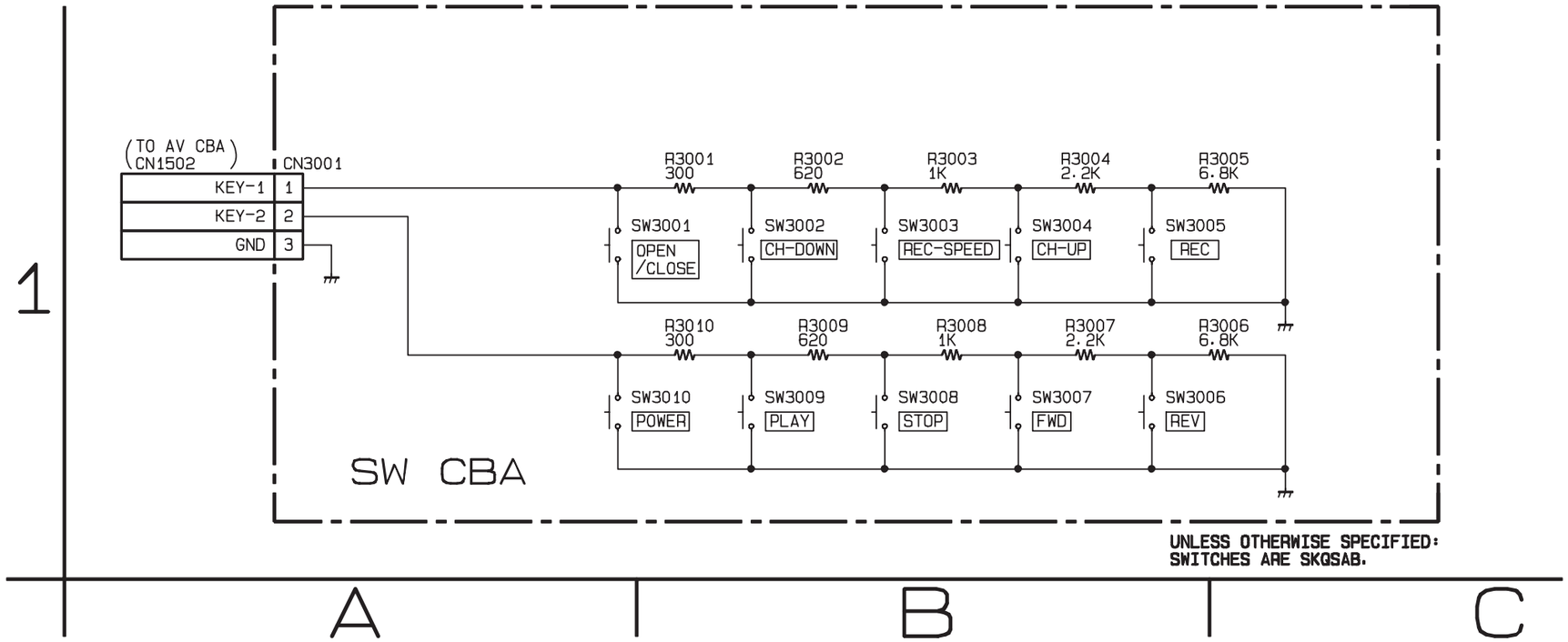
AV 5/5 Schematic Diagram

FL2001 MATRIX CHART

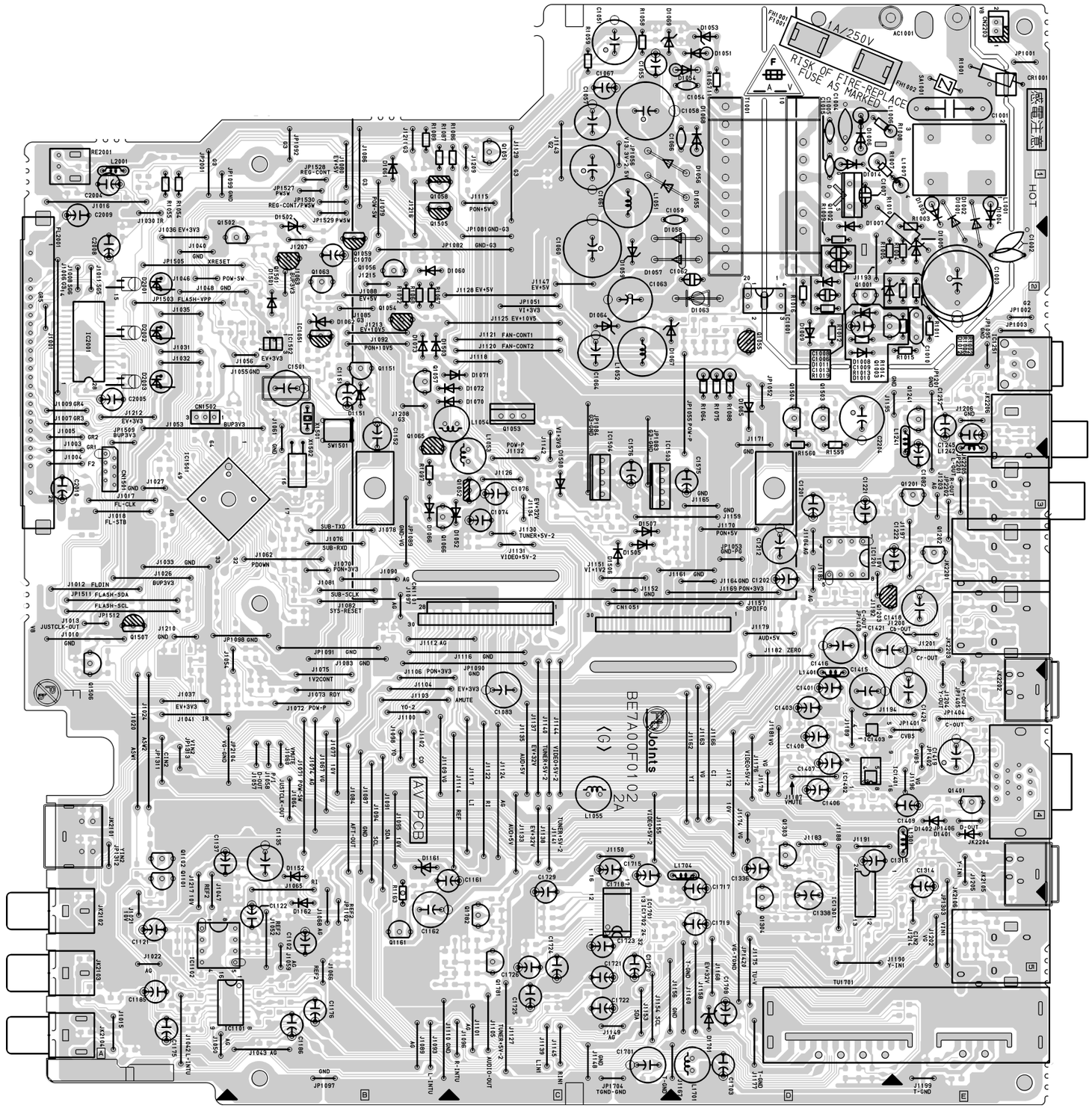
	7G	6G	5G	4G	3G	2G	1G
a	▶	a	a	a	a	a	XP
b	❚❚	b	b	b	b	b	SP
c	◷	c	c	c	c	c	LP
d	∞	d	d	d	d	d	EP
e	REC	e	e	e	e	e	SLP
f	PM	f	f	f	f	f	SEP
g	g	g	g	g	g	g	P.SCAN
h	h	:	T	:	→	C	W
i	REPEAT	CD	VCD	VCR	←	DVD	R



SW Schematic Diagram



AV CBA Top View

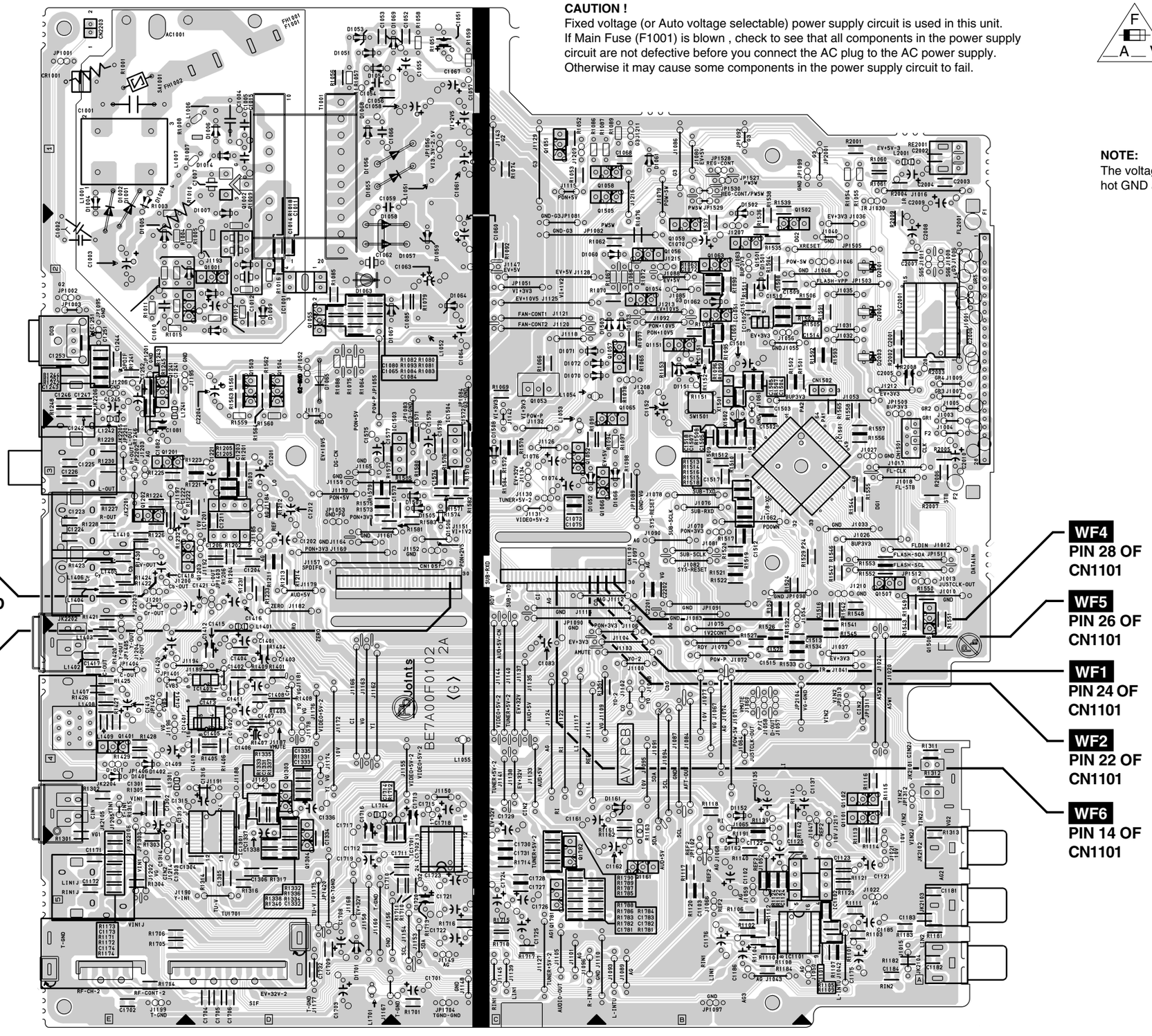


CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

CAUTION !
For continued protection against fire hazard,
replace only with the same type fuse.
ATTENTION : Pour une protection continue les risqes
d'Incele n'utiliser que des fusible de même type.
Risk of fire-replace fuse as marked.
"This symbol means fast operating fuse."
"Ce symbole représente un fusible à fusion rapide."

NOTE:
The voltage for parts in hot circuit is measured using
hot GND as a common terminal.

AV CBA Bottom View



CAUTION !
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If Main Fuse (F1001) is blown , check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
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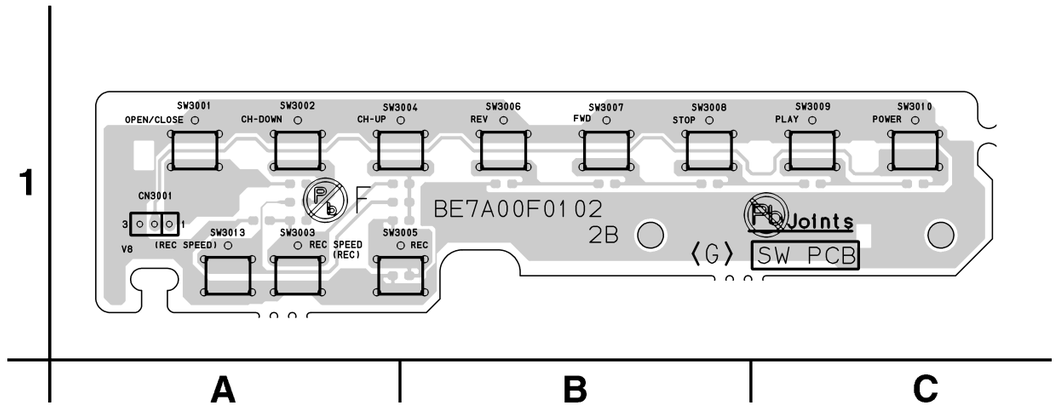
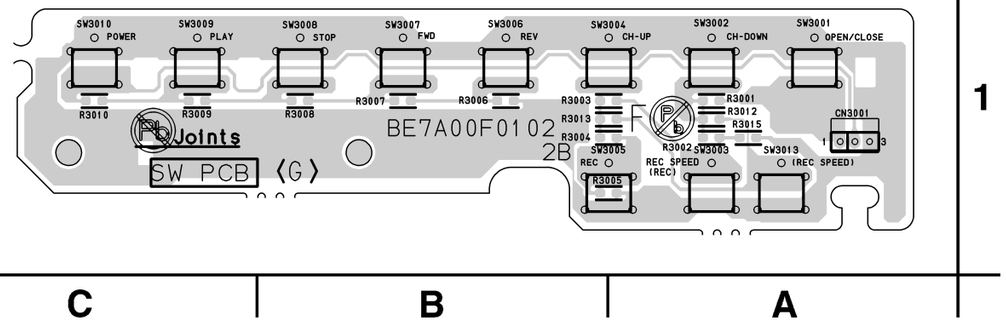
CAUTION !
For continued protection against fire hazard,
replace only with the same type fuse.
ATTENTION : Pour une protection continue les risqes d'Incele n'utiliser que des fusible de même type.
Risk of fire-replace fuse as marked.
"This symbol means fast operating fuse."
"Ce symbole reprèsente un fusible à fusion rapide."

NOTE:
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

SW CBA Top View

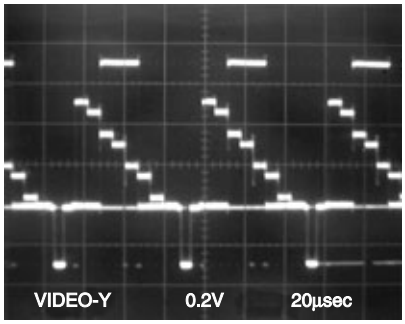


SW CBA Bottom View

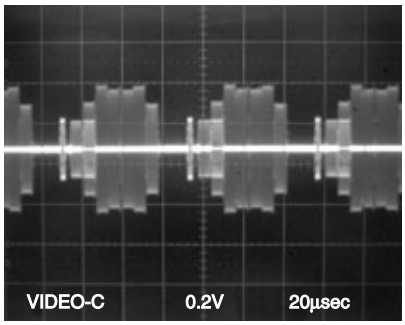


WAVEFORMS

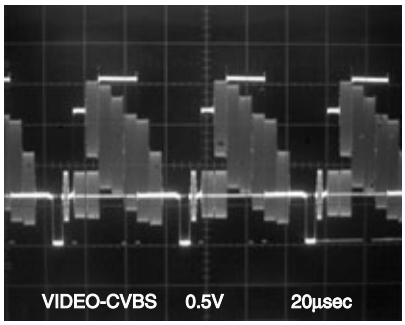
WF1 Pin 24 of CN1101



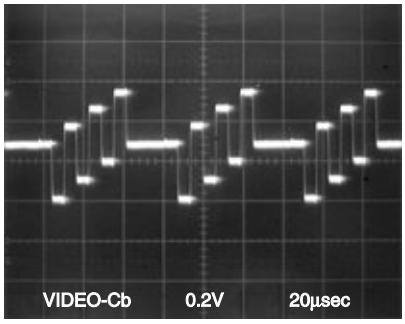
WF2 Pin 22 of CN1101



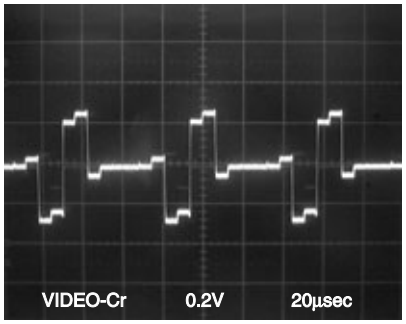
WF3 C1418 PLUS LEAD



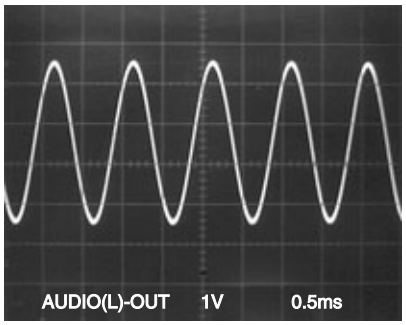
WF4 Pin 28 of CN1101



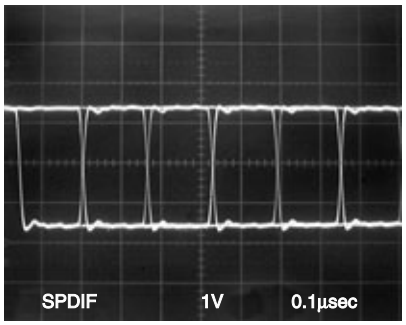
WF5 Pin 26 of CN1101



WF6 Pin 14 of CN1101

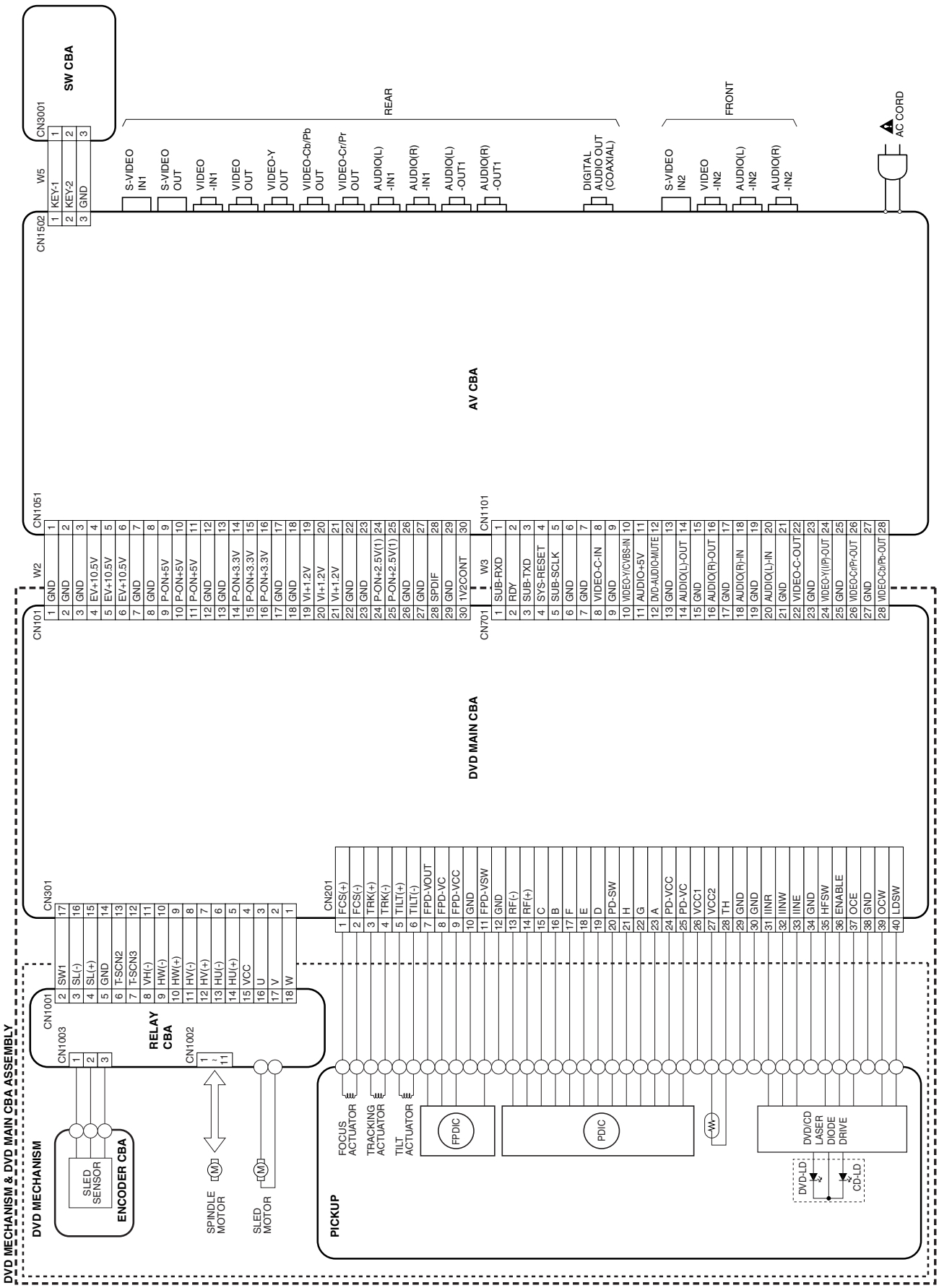


WF7 Pin 28 of CN1051

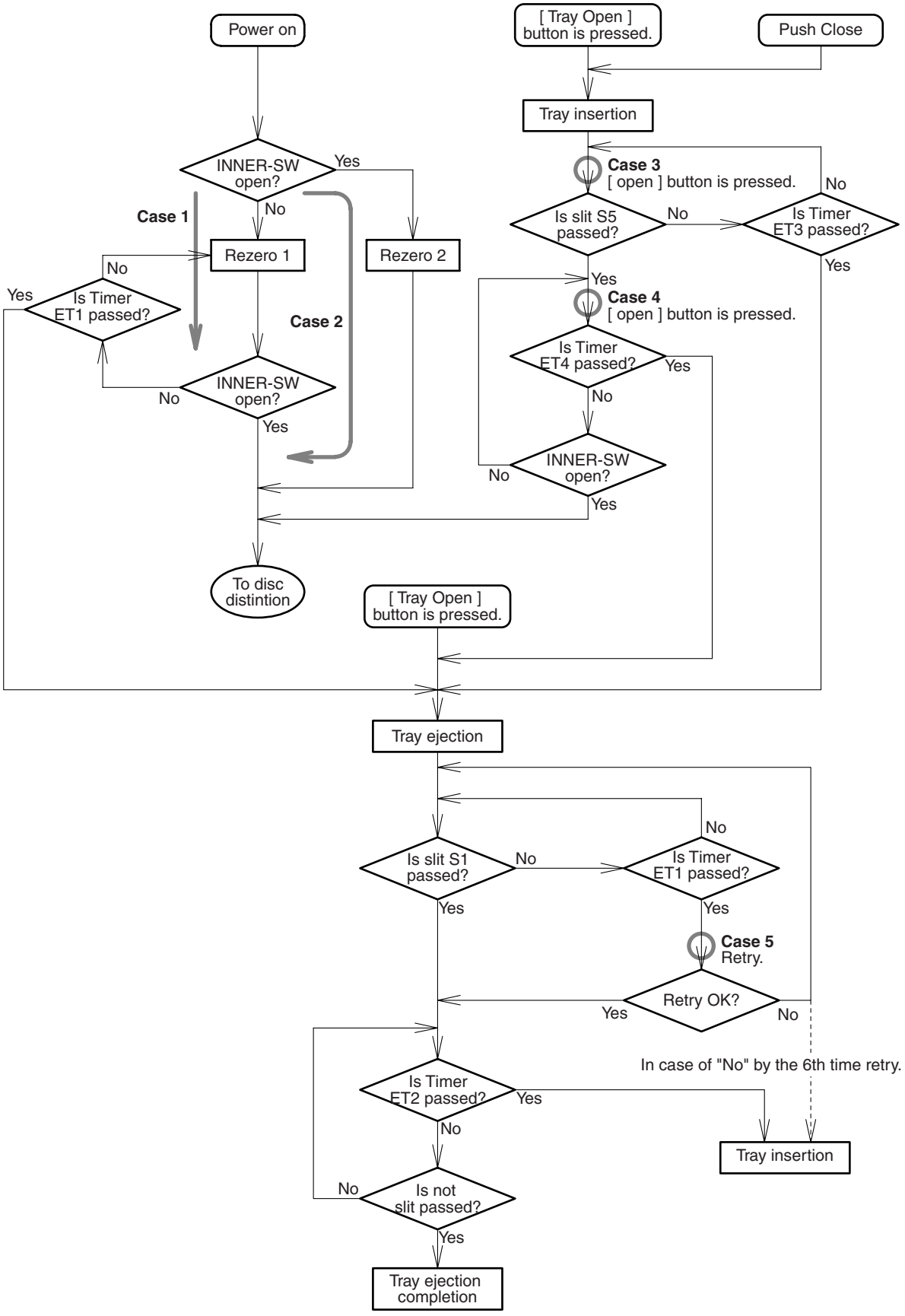


NOTE:
Input: COLOR BAR SIGNAL
(WITH 1KHz AUDIO SIGNAL)

WIRING DIAGRAM



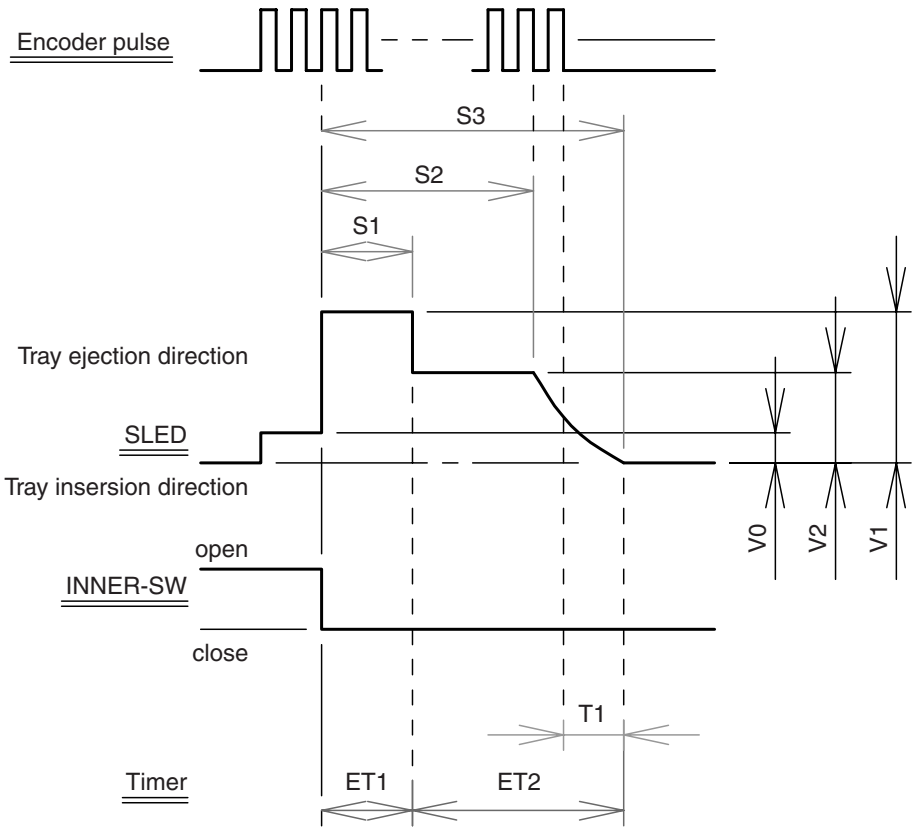
SYSTEM CONTROL TIMING CHARTS



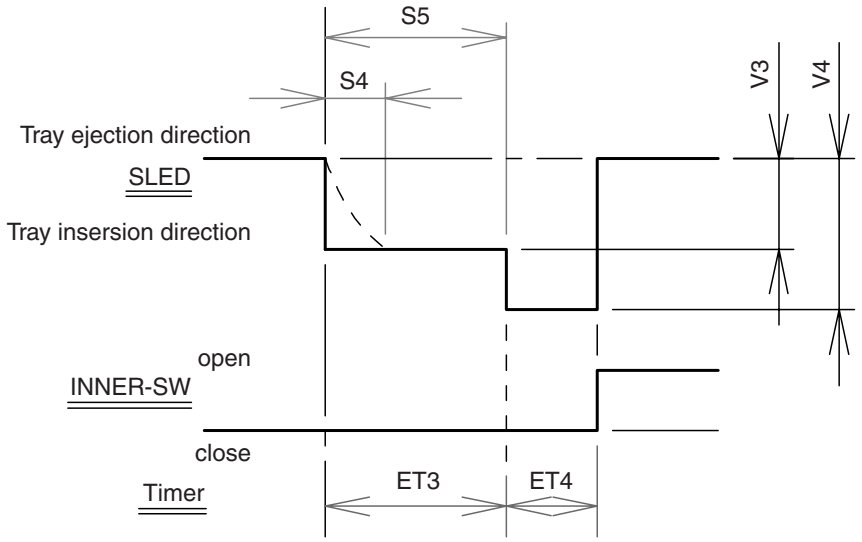
Parameter

V*: Voltage (HEX)	S*: Encoder pulse (HEX)	T*: Event timer	ET*: Error detection timer
V0: 2.0 V (00d)	S1: 300 (12c)	T1: 0.1 s	ET1: 5.0 s
V1: 4.5 V (022)	S2: 3300 (ce4)	T2: 3.0 s	ET2: 5.0 s
V2: 2.2 V (010)	S3: 3935 (f5f)	T3: 3.0 s	ET3: 3.0 s
V3: 2.4 V (013)	S4: 0 (000)	T4: 0.1 s	ET4: 3.0 s
V4: 6.0 V (030)	S5: 3000 (bb8)	T5: 0.1 s	

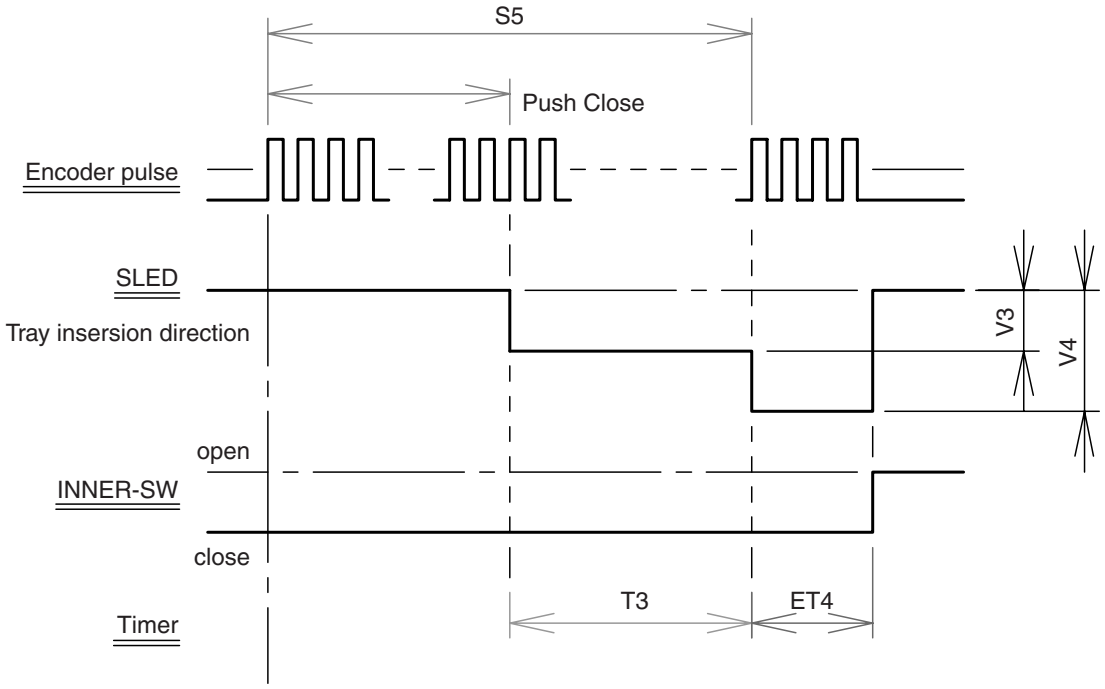
Tray open



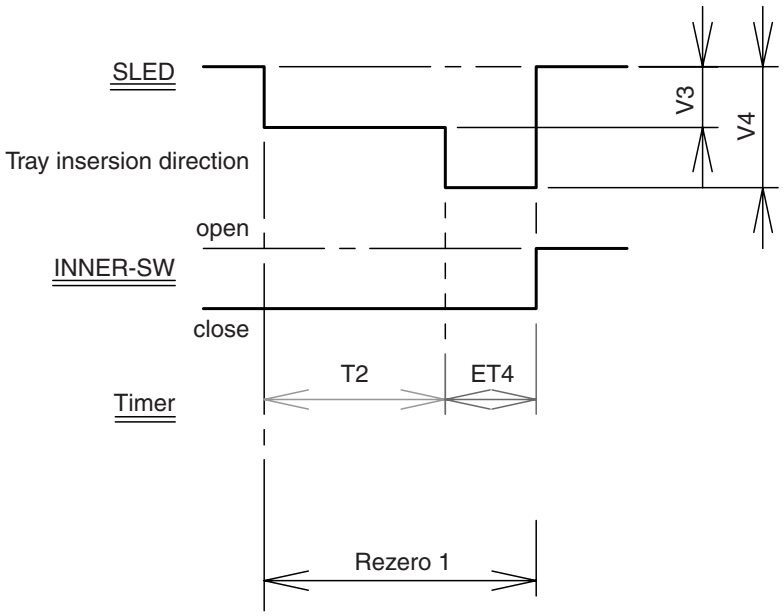
Tray close



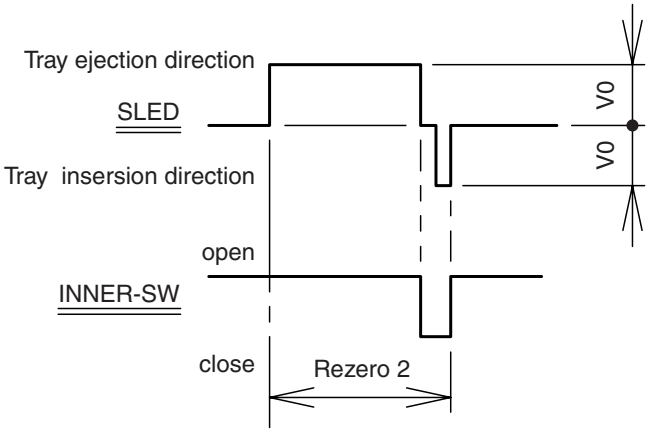
Push close



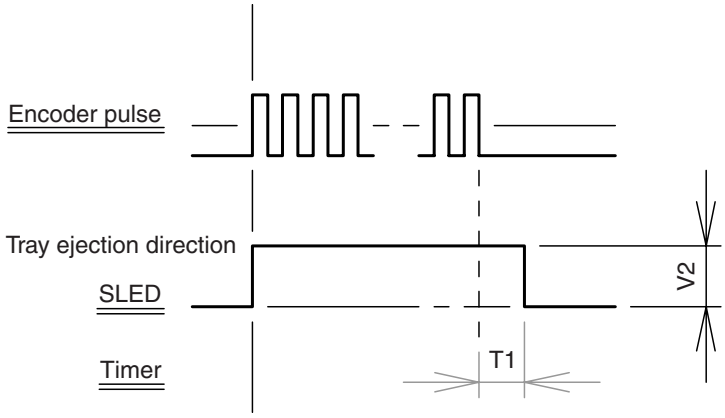
Case 1



Case 2



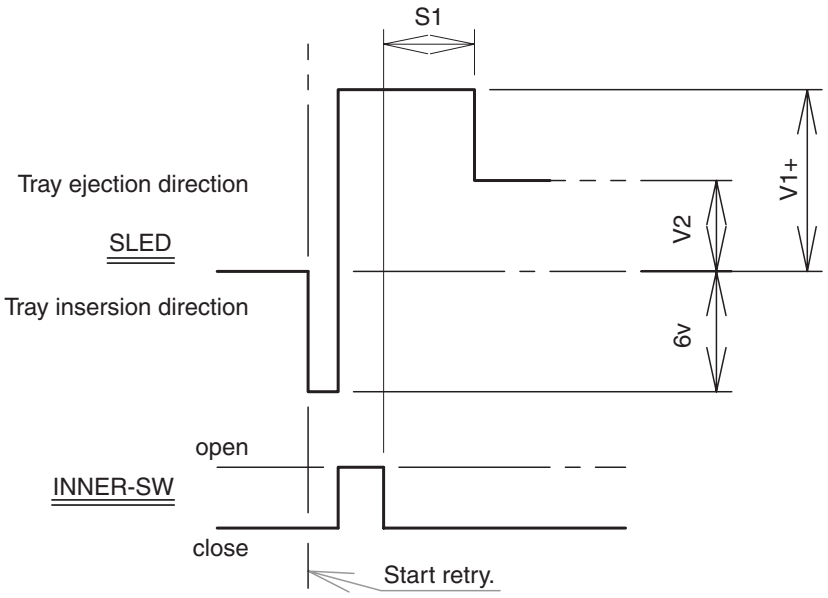
Case 3 (When [OPEN] button is pressed before the S5 passage.)



Case 4 (When [OPEN] button is pressed after the S5 passage.)

It starts opening after making closing complete once.

Case 5 (Retry.)



Retry frequency	V1+
1st time retry	6 v
2nd time retry	7 v
3rd time retry	8 v
4th time retry	9 v
5th time retry	9 v
6th time retry	9 v

IC PIN FUNCTION DESCRIPTIONS

IC1501 (SUB MICRO CONTROLLER)

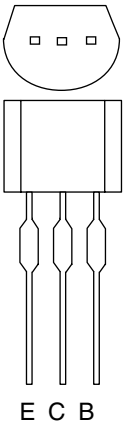
Pin No.	IN/ OUT	Signal Name	Function
1	IN	KEY-1	Key Data Input 1
2	IN	KEY-2	Key Data Input 2
3	IN	POW-SW	Abnormal Voltage Detection
4	IN	AFT	Tuner Voltage Input Signal
5	-	NU	Not Used
6	IN	EV+3.3V	+3.3V Power Supply
7	IN	VCC	+3.3V Power Supply
8	OUT	XOUT	Main Clock Output
9	IN	XIN	Main Clock Input
10	-	GND	Ground
11	IN	XCIN	Sub Clock Input
12	OUT	XCOUT	Sub Clock Output
13	-	GND	Ground
14	IN	RESET	Micro Controller Reset Signal
15	-	NU	Not Used
16	-	NU	Not Used
17	-	NU	Not Used
18	OUT	SUB-TXD	Transmission Data to Main Micro Controller
19	IN	SUB-RXD	Reception Data from Main Micro Controller
20	OUT	SUB-SCLK	Communication Clock with Main Micro Controller
21	-	NU	Not Used
22	OUT	SYS-RESET	System Reset Signal
23	-	NU	Not Used
24	-	NU	Not Used
25	-	NU	Not Used
26	OUT	1V2CONT	Power Regulator Control Signal
27	IN	REMOTE	Remote Signal Input
28	-	NU	Not Used
29	IN	RDY	Ready/Busy communication Control with Main Micro Controller
30	IN	P-DOWN	Power Voltage Down Detector Signal
31	-	NU	Not Used
32	-	NU	Not Used
33	IN/ OUT	SDA	Serial Data
34	OUT	SCL	Serial Clock
35	-	NU	Not Used
36	-	NU	Not Used
37	-	NU	Not Used
38	OUT	AUDIO-MUTE	Audio Mute Control Signal
39	OUT	AUDIO-SW2	Audio Input Select Signal
40	OUT	AUDIO-SW1	Audio Input Select Signal
41	OUT	VIDEO-SW1	Video Input Select Signal
42	OUT	VIDEO-SW2	Video Input Select Signal
43	OUT	VIDEO-SW3	Video Input Select Signal
44	OUT	VIDEO-MUTE	Video Mute Control Signal
45	-	NU	Not Used
46	-	NU	Not Used
47	-	NU	Not Used
48	OUT	FL-SDA	Serial Data
49	OUT	FL-STB	Serial Interface Strobe
50	OUT	FL-SCL	Serial Clock
51	-	NU	Not Used
52	OUT	REG-CONT	Power Regulator Control Signal
53	OUT	PWSW	Power ON Signal Output
54	-	NU	Not Used
55	-	NU	Not Used
56	-	NU	Not Used
57	-	NU	Not Used
58	-	NU	Not Used
59	-	NU	Not Used
60	-	NU	Not Used
61	-	GND	Ground
62	-	NU	Not Used
63	-	NU	Not Used
64	-	NU	Not Used

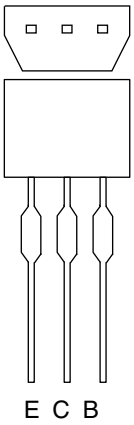
IC2001 (VFD DRIVER)

Pin No.	IN/ OUT	Signal Name	Function
1	IN	CLK	Serial Clock
2	IN	STB	Serial Interface Strobe
3	-	NU	Not Used
4	-	NU	Not Used
5	-	VSS	GND
6	-	VDD	Power Supply
7	OUT	a	Segment Output
8		b	
9		c	
10		d	
11		e	
12		f	
13		g	
14		h	
15	-	VEE	Pull Down Level
16	OUT	i	Segment Output
17	OUT	7G	Grid Output
18		6G	
19		5G	
20		4G	
21		3G	
22		2G	
23		1G	
24	-	VDD	Power Supply
25	-	VSS	GND
26	IN	OSC	Oscillator Input
27	-	NU	Not Used
28	IN	DIN	Serial Data Input

LEAD IDENTIFICATIONS

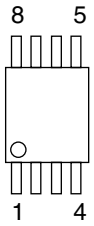
KTC3203-Y-AT/P





KTA1267-Y-AT/P
KTA1271-Y-AT/P
KTC3199-GR-AT/P
KRC103M-AT/P

UTC4558



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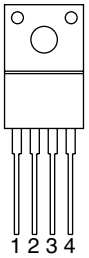

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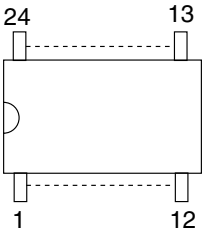
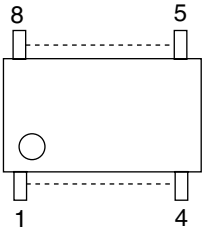
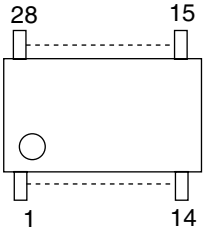


KIA4558P/P



PT6313-S-TP(L)



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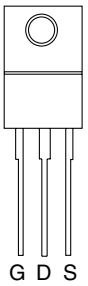

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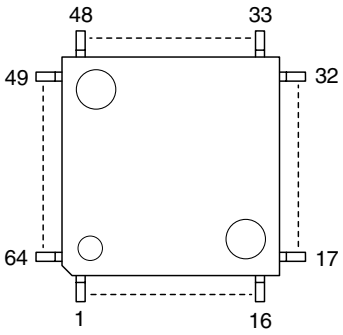

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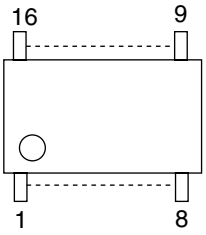
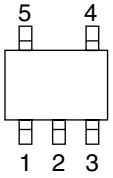


BU4219G-TR
R3112N191A-TR-FA
PST3619NR



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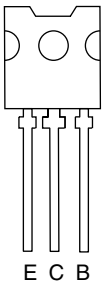
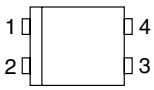
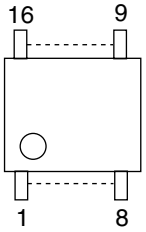


PS2561A-1(Q)

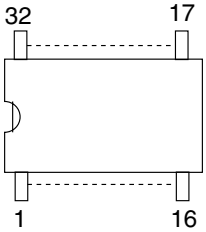


1: Anode
2: Cathode
3: Emitter
4: Collector

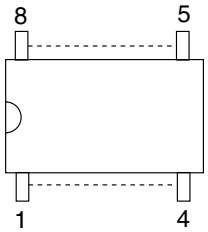
MM1637XVBE



AN5832SA-E1V



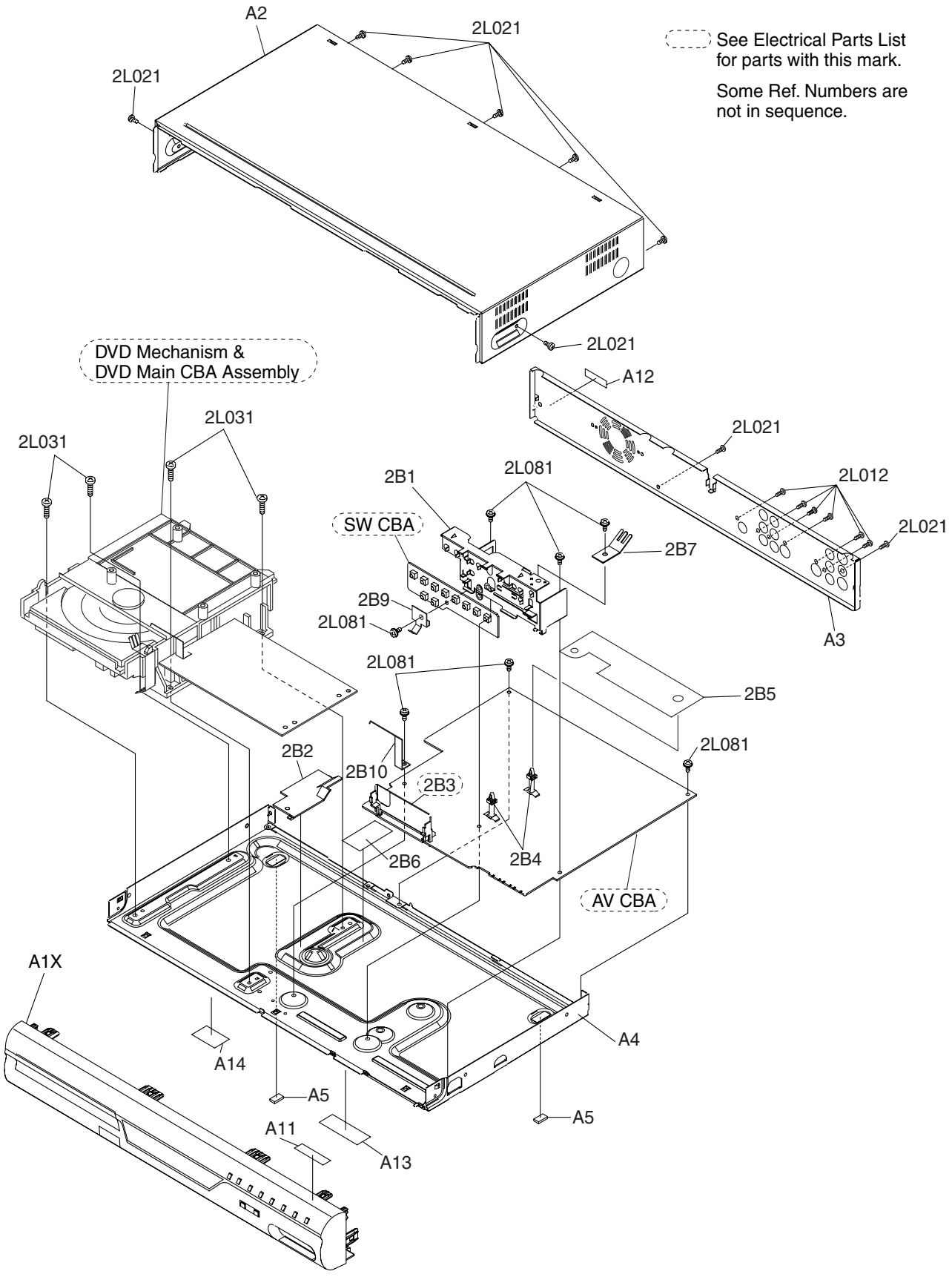
RC4580IP



Note:
A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base
R: Reference
G: Gate
D: Drain
S: Source

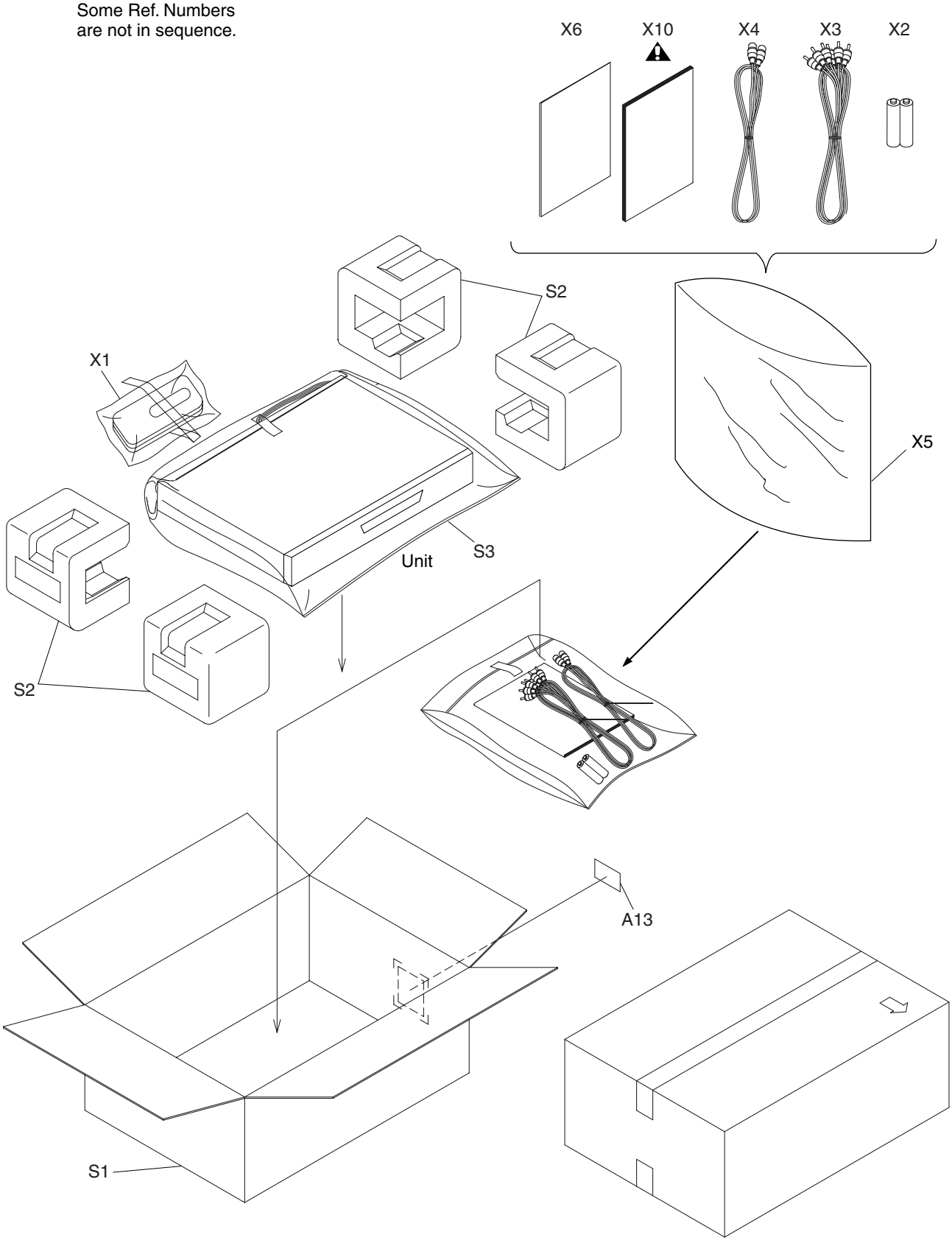
EXPLODED VIEWS

Cabinet



Packing

Some Ref. Numbers
are not in sequence.



MECHANICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTE: Parts that are not assigned part numbers (---------) are not available.

Ref. No.	Description	Part No.
A1X	FRONT ASSEMBLY E7A01UD	1VM322898
A2	TOP COVER E6700UD	1VM120049A
A3	REAR PANEL E7A01UD	1VM222416
A4	CHASSIS E6700ED	1VM120045A
A5	FOOT K7010UA	0VM403657A
A11	LABEL TELEPHONE NO.(SYMPHONIC) E9411UD	----------
A12	MANUFACTURE LABEL	0VM416321
A13	LABEL BAR CODE HB400UD	----------
A14	LABEL (C2) E6700UD NEW	----------
2B1	PCB HOLDER E7A00UD	1VM220926
2B2	CABLE COVER E7A00UD	1VM422494
2B4	LOCKING CARD SPACER KGLS-22S	XP0U039WD001
2B5	MAIN SHEET E7A00UD	1VM422583
2B6	POWER SHEET E6700UD	1VM421074
2B7	EARTH PLATE T E5420UD	0VM410380A
2B9	S PLATE EARTH E7A00UD	1VM423427
2B10	HEAT SINK PLATE EARTH E7A00UD	1VM423503
2L012	SCREW B-TIGHT M3X8 BIND HEAD+	GBHB3080
2L021	SCREW S-TIGHT M3X6 BIND CROM	GBCS3060
2L031	SCREW S-TIGHT M3X10 BIND HEAD+	GBJS3100
2L081	SCREW S-TIGHT M3X6 BIND HEAD+	GBJS3060
PACKING		
S1	GIFT BOX CARTON E7A01UD	1VM322900
S2	STYROFORM E6700UD	1VM220257
S3	UNIT BAG E5500UD	0VM411683
ACCESSORIES		
X1	REMOTE CONTROL UNIT NB075UD	NB075UD
X2	DRY BATTERY R6P/2S	XB0M451T0001
X3	AV CORD WPZ0102TM015	WPZ0102TM015
X4	RF CABLE DC95M95M001	WPZ0901CAB01
X5	ACCESSORY BAG E5700UD	0VM415576
X6	QUICK GUIDE E7A01UD	1VMN22667
X10⚠	OWNERS MANUAL E7A01UD	1VMN22666

ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTES:

1. Parts that are not assigned part numbers (---------) are not available.
2. Tolerance of Capacitors and Resistors are noted with the following symbols.

C.....±0.25% D.....±0.5% F.....±1%

G.....±2% J.....±5% K.....±10%

M.....±20% N.....±30% Z.....+80/-20%

DVD MECHANISM & DVD MAIN CBA

Ref. No.	Description	Part No.
	DVD MECHANISM & DVD MAIN CBA	N78F2CUN

AV ASSEMBLY

Ref. No.	Description	Part No.
	AV ASSEMBLY Consists of the following:	1VSA12795
	AV CBA (SUB-A) SW CBA (SUB-B)	---------- ----------

AV CBA

Ref. No.	Description	Part No.
	AV CBA (SUB-A) Consists of the following:	----------
	CAPACITORS	
C1001⚠	ACROSS THE LINE CAP. 0.068μF/250V	CT2E683DC016
C1002⚠	SAFETY CAP. 2200pF/250V	CCD2EMA0E222
C1003	ELECTROLYTIC CAPACITOR ZR200TA151K16DB	CA2D151DYG03
C1004	CERAMIC CAP. B K 0.01μF/500V	CCD2JKP0B103
C1005	CERAMIC CAP. B K 220pF/500V	CCD2JKP0B221
C1006	CERAMIC CAP.(AX) X K 5600pF/16V	CCA1CKT0X562
C1007	CERAMIC CAP.(AX) CH J 56pF/50V	CA1J560TU008
C1008	CERAMIC CAP.(AX) B K 3300pF/50V	CA1J332TU011
C1009	ELECTROLYTIC CAP. 10μF/16V M	CE1CMASDL100
C1010	FILM CAP.(P) 0.022μF/50V J	CMA1JJS00223
C1015	CERAMIC CAP. B K 220pF/500V	CCD2JKP0B221
C1051	ELECTROLYTIC CAP. 1000μF/6.3V M	CE0KMASDL102
C1052	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C1053	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C1055	ELECTROLYTIC CAP. 22μF/50V M	CE1JMASDL220
C1056	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1057	ELECTROLYTIC CAP. 1000μF/6.3V M(105°C)	CE0KMASTH102
C1058	ELECTROLYTIC CAP. 3300μF/6.3V M(105°C)	CE0KMZATH332
C1059	CERAMIC CAP. CH J 47pF/50V	CCD1JJSCH470
C1060	ELECTROLYTIC CAP. 4700μF/6.3V M(105°C)	CE0KMZATH472
C1061	ELECTROLYTIC CAP. 2200μF/6.3V M(105°C)	CE0KMASTH222
C1063	ELECTROLYTIC CAP. 1000μF/16V M(105°C)	CE1CMASTH102
C1064	ELECTROLYTIC CAP. 470μF/16V M	CE1CMASDL471
C1065	CHIP CERAMIC CAP.(1608) B K 0.033μF/50V	CHD1JK30B333
C1066	CERAMIC CAP. B K 220pF/500V	CCD2JKP0B221
C1067	ELECTROLYTIC CAP. 10μF/50V M	CE1JMASDL100
C1068	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1070	ELECTROLYTIC CAP. 100μF/6.3V M	CE0KMASDL101
C1074	ELECTROLYTIC CAP. 100μF/6.3V M	CE0KMASDL101
C1075	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1076	ELECTROLYTIC CAP. 100μF/6.3V M	CE0KMASDL101
C1080	CHIP CERAMIC CAP.(1608) B K 0.033μF/50V	CHD1JK30B333
C1081	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1082	ELECTROLYTIC CAP. 100μF/6.3V M	CE0KMASDL101
C1084	CHIP CERAMIC CAP.(1608) B K 0.033μF/50V	CHD1JK30B333
C1085	CHIP CERAMIC CAP.(1608) B K 1μF/10V	CHD1AK30B105
C1101	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1102	ELECTROLYTIC CAP. 100μF/6.3V M	CE0KMASDL101
C1121	ELECTROLYTIC CAP. 10μF/16V M	CE1CMASDL100
C1122	ELECTROLYTIC CAP. 10μF/16V M	CE1CMASDL100
C1123	CHIP CERAMIC CAP.(1608) CH J 33pF/50V	CHD1JJ3CH330
C1124	CHIP CERAMIC CAP.(1608) CH J 33pF/50V	CHD1JJ3CH330
C1125	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1135	ELECTROLYTIC CAP. 220μF/16V M	CE1CMASDL221
C1151	ELECTROLYTIC CAP. 47μF/16V M	CE1CMASDL470
C1152	ELECTROLYTIC CAP. 100μF/16V M	CE1CMASDL101
C1161	ELECTROLYTIC CAP. 47μF/16V M	CE1CMASDL470
C1171	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
C1172	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
C1175	ELECTROLYTIC CAP. 10μF/16V M	CE1CMASDL100
C1176	ELECTROLYTIC CAP. 10μF/16V M	CE1CMASDL100
C1181	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
C1182	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
C1185	ELECTROLYTIC CAP. 10μF/16V M	CE1CMASDL100
C1186	ELECTROLYTIC CAP. 10μF/16V M	CE1CMASDL100
C1201	ELECTROLYTIC CAP. 10μF/16V M	CE1CMASDL100
C1202	ELECTROLYTIC CAP. 10μF/16V M	CE1CMASDL100
C1203	CHIP CERAMIC CAP.(1608) CH J 270pF/50V	CHD1JJ3CH271
C1204	CHIP CERAMIC CAP.(1608) CH J 270pF/50V	CHD1JJ3CH271
C1205	CHIP CERAMIC CAP.(1608) CH J 47pF/50V	CHD1JJ3CH470
C1206	CHIP CERAMIC CAP.(1608) CH J 47pF/50V	CHD1JJ3CH470
C1211	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1212	ELECTROLYTIC CAP. 470μF/6.3V M	CE0KMASDL471
C1221	ELECTROLYTIC CAP. 10μF/16V M	CE1CMASDL100
C1222	ELECTROLYTIC CAP. 10μF/16V M	CE1CMASDL100
C1241	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1245	ELECTROLYTIC CAP. 47μF/16V M	CE1CMASDL470
C1301	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1302	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1303	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1304	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1305	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1306	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1313	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C1314	ELECTROLYTIC CAP. 22μF/16V M	CE1CMASDL220
C1315	ELECTROLYTIC CAP. 100μF/6.3V M	CE0KMASDL101
C1316	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1331	CHIP CERAMIC CAP.(1608) CH J 33pF/50V	CHD1JJ3CH330
C1332	CHIP CERAMIC CAP.(1608) CH J 33pF/50V	CHD1JJ3CH330
C1333	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1334	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1335	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1336	PCB JUMPER D0.6-P5.0	JW5.0T

Ref. No.	Description	Part No.
C1337	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1338	ELECTROLYTIC CAP. 100μF/6.3V M NP	CP0KMASNC101
C1405	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C1406	ELECTROLYTIC CAP. 1μF/50V M	CE1JMASDL1R0
C1407	ELECTROLYTIC CAP. 1μF/50V M	CE1JMASDL1R0
C1408	ELECTROLYTIC CAP. 1μF/50V M	CE1JMASDL1R0
C1409	ELECTROLYTIC CAP. 22μF/16V M	CE1CMASDL220
C1410	CHIP CERAMIC CAP.(1608) B K 0.01μF/50V	CHD1JK30B103
C1411	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1413	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1414	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1415	ELECTROLYTIC CAP. 100μF/6.3V M	CE0KMASDL101
C1417	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1418	ELECTROLYTIC CAP. 470μF/6.3V M	CE0KMASDL471
C1419	ELECTROLYTIC CAP. 1000μF/6.3V M	CE0KMASDL102
C1420	ELECTROLYTIC CAP. 470μF/6.3V M	CE0KMASDL471
C1421	ELECTROLYTIC CAP. 470μF/6.3V M	CE0KMASDL471
C1501	ELECTROLYTIC CAP. 1000μF/6.3V M	CE0KMASDL102
C1502	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1503	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1506	CHIP CERAMIC CAP. CH J 18pF/50V	CHD1JJ3CH180
C1507	CHIP CERAMIC CAP. CH J 18pF/50V	CHD1JJ3CH180
C1508	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
If C1509 is 0.015μF, then IC1502 is R3112N191A-TR-FA or BU4219G-TR.		
C1509	CHIP CERAMIC CAP.(1608) B K 0.015μF/50V	CHD1JK30B153
IC1502	VOLTAGE DETECT R3112N191A-TR-FA or	QSZBA0TRC021
	RESET IC BU4219G-TR	QSZBA0TRM090
If C1509 is 0.1μF, then IC1502 is PST3619NR.		
C1509	CHIP CERAMIC CAP.(1608) B K 0.1μF/25V	CHD1EK30B104
IC1502	SYSTEM RESET IC PST3619NR	QSZBA0TMM151
C1510	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
C1512	CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C1513	CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C1516	CHIP CERAMIC CAP.(1608) CH D 10pF/50V	CHD1JD3CH100
C1518	CHIP CERAMIC CAP. CH C 2pF/50V	CHD1JC3CH2R0
C1573	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1575	ELECTROLYTIC CAP. 100μF/6.3V M(105°C)	CE0KMASTH101
C1576	ELECTROLYTIC CAP. 100μF/6.3V M(105°C)	CE0KMASTH101
C1577	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1578	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1701	ELECTROLYTIC CAP. 1000μF/6.3V M	CE0KMASDL102
C1702	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1703	ELECTROLYTIC CAP. 100μF/6.3V M	CE0KMASDL101
C1704	CHIP CERAMIC CAP.(1608) CH J 33pF/50V	CHD1JJ3CH330
C1706	CHIP CERAMIC CAP.(1608) B K 0.033μF/50V	CHD1JK30B333
C1708	ELECTROLYTIC CAP. 1μF/50V M	CE1JMASDL1R0
C1709	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1712	CHIP CERAMIC CAP.(1608) CH J 1000pF/50V	CHD1JJ3CH102
C1713	CHIP CERAMIC CAP.(1608) B K 0.1μF/25V	CHD1EK30B104
C1714	CHIP CERAMIC CAP.(1608) B K 0.1μF/25V	CHD1EK30B104
C1715	ELECTROLYTIC CAP. 0.33μF/50V M	CE1JMASDLR33
C1716	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1718	ELECTROLYTIC CAP. 4.7μF/50V M	CE1JMASDL4R7
C1719	ELECTROLYTIC CAP. 2.2μF/50V M	CE1JMASDL2R2
C1720	ELECTROLYTIC CAP. 2.2μF/50V M	CE1JMASDL2R2
C1721	ELECTROLYTIC CAP. 1μF/50V M	CE1JMASDL1R0
C1722	ELECTROLYTIC CAP. 1μF/50V M	CE1JMASDL1R0
C1723	ELECTROLYTIC CAP. 2.2μF/50V M	CE1JMASDL2R2
C1724	ELECTROLYTIC CAP. 10μF/16V M	CE1CMASDL100
C1725	ELECTROLYTIC CAP. 3.3μF/50V M	CE1JMASDL3R3
C1726	ELECTROLYTIC CAP. 3.3μF/50V M	CE1JMASDL3R3
C1727	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C1728	CHIP CERAMIC CAP.(1608) B K 0.022μF/50V	CHD1JK30B223

Ref. No.	Description	Part No.
C1729	ELECTROLYTIC CAP. 2.2μF/50V M	CE1JMASDL2R2
C1730	CHIP CERAMIC CAP.(1608) B K 0.033μF/50V	CHD1JK30B333
C1731	CHIP CERAMIC CAP.(1608) B K 0.1μF/25V	CHD1EK30B104
C1732	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C2001	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C2002	CHIP CERAMIC CAP.(1608) CH J 100pF/50V	CHD1JJ3CH101
C2003	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C2004	ELECTROLYTIC CAP. 100μF/6.3V M	CE0KMASDL101
C2005	ELECTROLYTIC CAP. 100μF/6.3V M	CE0KMASDL101
C2006	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C2007	CHIP CERAMIC CAP.(1608) F Z 0.1μF/50V	CHD1JZ30F104
C2008	ELECTROLYTIC CAP. 3.3μF/50V M	CE1JMASDL3R3
C2009	ELECTROLYTIC CAP. 3.3μF/50V M	CE1JMASDL3R3
C2010	ELECTROLYTIC CAP. 3.3μF/50V M	CE1JMASDL3R3
DIODES		
D1001	DIODE 1N5397-B	NDLZ001N5397
D1002	DIODE 1N5397-B	NDLZ001N5397
D1003	DIODE 1N5397-B	NDLZ001N5397
D1004	DIODE 1N5397-B	NDLZ001N5397
D1005	PCB JUMPER D0.6-P5.0	JW5.0T
D1006	RECTIFIER DIODE BA157	NDQZ000BA157
D1007	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1008	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1009	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1010	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1011	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1012	ZENER DIODE DZ-18BSBT265	NDTB00DZ18BS
D1014	RECTIFIER DIODE BA157	NDQZ000BA157
D1051	SCHOTTKY BARRIER DIODE SB140	NDQZ000SB140
D1053	ZENER DIODE DZ-20BSBT265	NDTB00DZ20BS
D1054	RECTIFIER DIODE BA157	NDQZ000BA157
D1055	SCHOTTKY BARRIER DIODE SB140	NDQZ000SB140
D1056	SCHOTTKY BARRIER DIODE SB240-B/P	NDWZ000SB240
D1058	SCHOTTKY BARRIER DIODE SB340	NDQZ000SB340
D1060	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1061	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1062	ZENER DIODE DZ-4.3BSAT265	NDTA0DZ4R3BS
D1063	RECTIFIER DIODE FR302	NDWZ000FR302
D1064	ZENER DIODE DZ-13BSBT265	NDTB00DZ13BS
D1065	PCB JUMPER D0.6-P10.0	JW10.0T
D1066	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1067	ZENER DIODE DZ-6.8BSBT265	NDTB0DZ6R8BS
D1068	RECTIFIER DIODE BA157	NDQZ000BA157
D1070	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1071	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1072	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1151	ZENER DIODE DZ-11BSBT265	NDTB00DZ11BS
D1152	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1161	ZENER DIODE DZ-5.6BSBT265	NDTB0DZ5R6BS
D1162	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1503	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1507	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1508	SWITCHING DIODE 1N4148M	NDTZ01N4148M
D1701	ZENER DIODE DZ-33BSBT265	NDTB00DZ33BS
ICS		
IC1001⚠	PHOTOCOUPLER PS2561A-1(Q)	QPEQPS2561A1
IC1101	IC SWITCHING CD4052BNSR	NSZBA0TTY091
IC1102	IC OP AMP RC4580IP	NSZBA0STY173
IC1201	IC OP AMP UTC4558	NSZBA0S2H001
IC1301	VIDEO SWITCH MM1697AJBE	QSZBA0TMM150
IC1401	DRIVER FOR DVD MM1637XVBE	QSZBA0TMM102
IC1501	MICROCONTROLLER 8BIT MN101C77AFK1	QSZAB0RMS047

Ref. No.	Description	Part No.
If IC1502 is R3112N191A-TR-FA or BU4219G-TR, then C1509 is 0.015μF.		
IC1502	VOLTAGE DETECT R3112N191A-TR-FA or	QSZBA0TRC021
	RESET IC BU4219G-TR	QSZBA0TRM090
C1509	CHIP CERAMIC CAP.(1608) B K 0.015μF/50V	CHD1JK30B153
If IC1502 is PST3619NR, then C1509 is 0.1μF.		
IC1502	SYSTEM RESET IC PST3619NR	QSZBA0TMM151
C1509	CHIP CERAMIC CAP.(1608) B K 0.1μF/25V	CHD1EK30B104
IC1503	VOLTAGE REGULATOR PQ070XF01SZH	QSZBA0SSH054
IC1504	VOLTAGE REGULATOR PQ070XF01SZH	QSZBA0SSH054
IC1701	IC MTS DECORDER AN5832SA-E1V	QSZBA0TMS003
IC2001	VFD DRIVER/CONTROLLER IC PT6313-S-TP(L)	NSZBA0TG2007
COILS		
L1001⚠	LINE FILTER 27MH TLF14CB2730R4	LLBG00ZTU034
L1006	BEAD CORE B16 RH 3.5X10X1.3	XL03010XM001
L1007	BEAD CORE B16 RH 3.5X10X1.3	XL03010XM001
L1051	CHOKE COIL(47μH) LHL10NB470K	LLARKGQTU470
L1052	POWER INDUCTORS TWKBNP-180K	LLC180KKV007
L1053	CHOKE COIL 22μH-K	LLBD00PKV021
L1054	CHOKE COIL 22μH-K	LLBD00PKV021
L1055	CHOKE COIL 22μH-K	LLBD00PKV021
L1241	INDUCTOR(100μH K) LAP02TA101K	LLAXKATTU101
L1242	INDUCTOR(0.47μH K) LAP02TAR47K	LLAXKATTUR47
L1301	PCB JUMPER D0.6-P5.0	JW5.0T
L1401	PCB JUMPER D0.6-P5.0	JW5.0T
L1701	CHOKE COIL 22μH-K	LLBD00PKV021
L1704	PCB JUMPER D0.6-P5.0	JW5.0T
L2001	INDUCTOR(100μH K) LAP02TA101K	LLAXKATTU101
TRANSISTORS		
Q1001	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q1002⚠	FET 2SK3757(Q)	QFWZ02SK3757
Q1003	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q1053	TRANSISTOR S2Y52(FUNAI Q H)	QQWZ00S2Y52Q
Q1054	TRANSISTOR (PB FREE) KTA1271-Y-AT/P	NQSYKTA1271P
Q1055	TRANSISTOR KTA1267-Y-AT/P	NQSYKTA1267P
Q1056	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q1057	TRANSISTOR KTC3203-Y-AT/P	NQSYKTC3203P
Q1063	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q1065	TRANSISTOR (PB FREE) KTA1271-Y-AT/P	NQSYKTA1271P
Q1101	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q1102	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q1151	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q1161	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q1201	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q1202	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q1203	TRANSISTOR KTA1267-Y-AT/P	NQSYKTA1267P
Q1241	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q1303	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q1304	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q1501	TRANSISTOR KTA1267-Y-AT/P	NQSYKTA1267P
Q1502	TRANSISTOR KTC3199-GR-AT/P	NQS4KTC3199P
Q1505	NPN TRANSISTOR KRC103M-AT/P	NQSZKRC103MP
RESISTORS		
R1001⚠	CARBON RES. 1/2W J 3.3M Ω	RCX2335DP001
R1002	CARBON RES. 1/4W J 680k Ω	RCX4JATZ0684
R1003	CARBON RES. 1/4W J 1.8M Ω	RCX4JATZ0185
R1004	CARBON RES. 1/4W J 1.8M Ω	RCX4JATZ0185
R1005	CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R1006	CARBON RES. 1/4W J 820k Ω	RCX4JATZ0824
R1007	METAL OXIDE FILM RES. 2W J 2.2 Ω	RN02JZLZ02R2
R1008	METAL FILM RES.(STRAIGHT) 1W J 15k Ω	RN01JZPZ0153
R1009	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R1010	METAL OXIDE FILM RES. 2W J 0.75 Ω	RN02R75ZU001

Ref. No.	Description	Part No.
R1011	CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R1012	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1013	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R1014	CARBON RES. 1/4W J 100k Ω	RCX4JATZ0104
R1015	CARBON RES. 1/4W J 470k Ω	RCX4JATZ0474
R1016	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1051	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1054	CARBON RES. 1/4W J 10 Ω	RCX4JATZ0100
R1055	CARBON RES. 1/4W J 10 Ω	RCX4JATZ0100
R1057	PCB JUMPER D0.6-P5.0	JW5.0T
R1058	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R1059	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R1060	CHIP RES. 1/10W J 390 Ω	RRXAJR5Z0391
R1061	CHIP RES. 1/10W J 470 Ω	RRXAJR5Z0471
R1062	CHIP RES. 1/10W J 620 Ω	RRXAJR5Z0621
R1063	CHIP RES. 1/10W J 27 Ω	RRXAJR5Z0270
R1064	CARBON RES. 1/2W J 680 Ω	RCX2JZPZ0681
R1065	CHIP RES. 1/10W J 620 Ω	RRXAJR5Z0621
R1066	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1067	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R1068	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R1070	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1072	CARBON RES. 1/4W J 680 Ω	RCX4JATZ0681
R1073	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1074	CHIP RES. 1/10W J 620 Ω	RRXAJR5Z0621
R1075	CARBON RES. 1/2W J 680 Ω	RCX2JZPZ0681
R1076	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R1077	CHIP RES. 1/10W J 1.1k Ω	RRXAJR5Z0112
R1079	CHIP RES. 1/10W J 1.8k Ω	RRXAJR5Z0182
R1080	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1081	CHIP RES.(1608) 1/10W F 2.7k Ω	RRXAFR5H0272
R1082	CHIP RES. 1/10W F 5.6k Ω	RRXAFR5H0562
R1083	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R1084	CHIP RES. 1/10W J 15k Ω	RRXAJR5Z0153
R1085	CHIP RES. 1/10W J 1.8k Ω	RRXAJR5Z0182
R1087	CARBON RES. 1/4W G 1.5k Ω	RCX4GATZ0152
R1089	CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R1090	CHIP RES. 1/10W J 1.8k Ω	RRXAJR5Z0182
R1092	CHIP RES. 1/10W J 10 Ω	RRXAJR5Z0100
R1093	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1094	CHIP RES. 1/10W J 120 Ω	RRXAJR5Z0121
R1097	CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R1101	CHIP RES.(1608) 1/10W F 68k Ω	RRXAFR5H0683
R1102	CHIP RES.(1608) 1/10W F 68k Ω	RRXAFR5H0683
R1103	CHIP RES.(1608) 1/10W F 68k Ω	RRXAFR5H0683
R1104	CHIP RES.(1608) 1/10W F 68k Ω	RRXAFR5H0683
R1105	CHIP RES.(1608) 1/10W F 62k Ω	RRXAFR5H0623
R1106	CHIP RES.(1608) 1/10W F 62k Ω	RRXAFR5H0623
R1107	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R1108	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R1109	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R1110	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R1111	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R1112	CHIP RES. 1/10W J 18k Ω	RRXAJR5Z0183
R1113	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1114	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1115	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R1116	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R1117	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1120	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R1121	CHIP RES.(1608) 1/10W F 33k Ω	RRXAFR5H0333
R1122	CHIP RES.(1608) 1/10W F 33k Ω	RRXAFR5H0333
R1139	CHIP RES. 1/10W J 300 Ω	RRXAJR5Z0301

Ref. No.	Description	Part No.
R1140	CHIP RES. 1/10W J 750 Ω	RRXAJR5Z0751
R1151	CHIP RES. 1/10W J 110 Ω	RRXAJR5Z0111
R1152	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1161	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R1162	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R1163	CARBON RES. 1/4W J 27 Ω	RCX4JATZ0270
R1173	CHIP RES. 1/10W J 180k Ω	RRXAJR5Z0184
R1174	CHIP RES. 1/10W J 180k Ω	RRXAJR5Z0184
R1183	CHIP RES. 1/10W J 180k Ω	RRXAJR5Z0184
R1184	CHIP RES. 1/10W J 180k Ω	RRXAJR5Z0184
R1201	CHIP RES.(1608) 1/10W F 8.2k Ω	RRXAFR5H0822
R1202	CHIP RES.(1608) 1/10W F 8.2k Ω	RRXAFR5H0822
R1203	CHIP RES. 1/10W J 13k Ω	RRXAJR5Z0133
R1204	CHIP RES. 1/10W J 13k Ω	RRXAJR5Z0133
R1205	CHIP RES.(1608) 1/10W F 13k Ω	RRXAFR5H0133
R1206	CHIP RES.(1608) 1/10W F 13k Ω	RRXAFR5H0133
R1213	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1221	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R1222	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R1223	CHIP RES. 1/10W J 470 Ω	RRXAJR5Z0471
R1224	CHIP RES. 1/10W J 470 Ω	RRXAJR5Z0471
R1225	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1226	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1227	CHIP RES. 1/10W J 220 Ω	RRXAJR5Z0221
R1228	CHIP RES. 1/10W J 220 Ω	RRXAJR5Z0221
R1231	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R1232	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R1233	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R1241	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1242	CHIP RES. 1/10W J 1.8k Ω	RRXAJR5Z0182
R1243	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R1244	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R1245	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R1246	CHIP RES. 1/10W J 220 Ω	RRXAJR5Z0221
R1248	CHIP RES. 1/10W J 100k Ω	RRXAJR5Z0104
R1301	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R1302	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R1304	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R1311	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R1312	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R1313	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R1331	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1333	CHIP RES. 1/10W J 470 Ω	RRXAJR5Z0471
R1334	CHIP RES. 1/10W J 470 Ω	RRXAJR5Z0471
R1335	CHIP RES. 1/10W J 3k Ω	RRXAJR5Z0302
R1336	CHIP RES. 1/10W J 12k Ω	RRXAJR5Z0123
R1337	CHIP RES. 1/10W J 3k Ω	RRXAJR5Z0302
R1338	CHIP RES. 1/10W J 12k Ω	RRXAJR5Z0123
R1403	CHIP RES. 1/10W J 20k Ω	RRXAJR5Z0203
R1405	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R1406	CHIP RES.(1608) 1/10W F 220 Ω	RRXAFR5H0221
R1407	CHIP RES.(1608) 1/10W F 200 Ω	RRXAFR5H0201
R1408	CHIP RES.(1608) 1/10W F 220 Ω	RRXAFR5H0221
R1409	CHIP RES.(1608) 1/10W F 220 Ω	RRXAFR5H0221
R1420	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R1421	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R1422	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R1423	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R1424	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R1430	CHIP RES. 1/10W J 75 Ω	RRXAJR5Z0750
R1501	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R1502	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R1503	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1505	CHIP RES. 1/10W J 820k Ω	RRXAJR5Z0824
R1506	CHIP RES. 1/10W J 470k Ω	RRXAJR5Z0474
R1507	CHIP RES. 1/10W J 470 Ω	RRXAJR5Z0471
R1508	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1511	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1513	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1514	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1515	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1516	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1517	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1518	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1519	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1520	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1524	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1527	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1528	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1531	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1532	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1533	CHIP RES. 1/10W J 10k Ω	RRXAJR5Z0103
R1534	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R1535	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1536	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R1537	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R1538	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R1539	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R1541	CHIP RES. 1/10W J 6.8k Ω	RRXAJR5Z0682
R1542	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1545	CHIP RES. 1/10W J 5.6k Ω	RRXAJR5Z0562
R1546	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R1547	CHIP RES. 1/10W J 4.7k Ω	RRXAJR5Z0472
R1555	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1556	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1557	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1558	CHIP RES. 1/10W J 22k Ω	RRXAJR5Z0223
R1565	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1570	CHIP RES. 1/10W J 2.7k Ω	RRXAJR5Z0272
R1571	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R1572	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R1573	CHIP RES.(1608) 1/10W F 1.5k Ω	RRXAFR5H0152
R1574	CHIP RES.(1608) 1/10W F 120 Ω	RRXAFR5H0121
R1575	CHIP RES. 1/10W F 15k Ω	RRXAFR5H0153
R1576	CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5H0103
R1577	CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5H0103
R1578	CHIP RES.(1608) 1/10W F 10k Ω	RRXAFR5H0103
R1579	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1580	CHIP RES. 1/10W J 47k Ω	RRXAJR5Z0473
R1701	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1705	CHIP RES. 1/10W J 220 Ω	RRXAJR5Z0221
R1706	CHIP RES.(1608) 1/10W 0 Ω	RRXAZR5Z0000
R1710	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1711	CHIP RES. 1/10W J 100 Ω	RRXAJR5Z0101
R1712	CHIP RES. 1/10W J 3.3k Ω	RRXAJR5Z0332
R1713	CHIP RES. 1/10W J 180k Ω	RRXAJR5Z0184
R2001	CHIP RES. 1/10W J 33 Ω	RRXAJR5Z0330
R2003	CHIP RES. 1/10W J 68k Ω	RRXAJR5Z0683
R2004	CHIP RES. 1/10W J 6.8k Ω	RRXAJR5Z0682
R2005	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R2006	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R2007	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R2008	CHIP RES. 1/10W J 10 Ω	RRXAJR5Z0100
MISCELLANEOUS		
2B3	FL HOLDER E6700UD	1VM320515

Ref. No.	Description	Part No.
AC1001⚠	AC CORD W/O A GND WIRE UL/CSA/1660/NO/ BALCK	WAC0162LTE05
F1001⚠	FUSE CURRENT PEG20C0NG001	PEG20C0NG001
FL2001	VACUUM FLUORESCENT DISPLAY 7-BT-301N	TVFD1C0FT048
FH1001	FUSE HOLDER MSF-015 LF (B110)	XH01Z00LY002
FH1002	FUSE HOLDER MSF-015 LF (B110)	XH01Z00LY002
JK2101	MINI DIN SOCKET MDC1-34-020	JXEL040RP003
JK2102	RCA JACK(YELLOW) MTJ-032-05B-20(B110)	JXRL010LY135
JK2103	RCA JACK(WHITE) MTJ-032-05B-22(B110)	JXRL010LY136
JK2104	RCA JACK(RED) MTJ-032-05A-21(B110)	JYRL010LY029
JK2105	S TYPE JACK MDC-050V-2.4 LF(B110	JXEL040LY003
JK2106	RCA JACK 3PIN MSD-243V-07 NI FE LF	JXRL030LY124
JK2201	RCA JACK 3PIN MSD-243V-07 NI FE LF	JXRL030LY124
JK2202	S TYPE JACK MDC-050V-2.4 LF(B110	JXEL040LY003
JK2203	RCA JACK 3PIN MSD-243V-18 NI FE LF	JXRL030LY132
JK2206	RCA JACK(BLACK) MSP-251V-01 NI FE LF	JXRL010LY125
JP1001	PCB JUMPER D0.6-P5.0	JW5.0T
JP1003	PCB JUMPER D0.6-P7.0	JW7.0T
JP1081	PCB JUMPER D0.6-P11.0	JW11.0T
JP1082	PCB JUMPER D0.6-P30.0	JW30.0T
JP1083	PCB JUMPER D0.6-P15.0	JW15.0T
JP1084	PCB JUMPER D0.6-P20.0	JW20.0T
JP1089	PCB JUMPER D0.6-P15.0	JW15.0T
JP1091	PCB JUMPER D0.6-P22.5	JW22.5T
JP1092	PCB JUMPER D0.6-P7.0	JW7.0T
JP1097	PCB JUMPER D0.6-P5.0	JW5.0T
JP1098	PCB JUMPER D0.6-P12.5	JW12.5T
JP1099	PCB JUMPER D0.6-P5.0	JW5.0T
JP1303	PCB JUMPER D0.6-P19.0	JW19.0T
JP1311	PCB JUMPER D0.6-P10.0	JW10.0T
JP1312	PCB JUMPER D0.6-P5.0	JW5.0T
JP1313	PCB JUMPER D0.6-P5.0	JW5.0T
JP1402	PCB JUMPER D0.6-P5.0	JW5.0T
JP1404	PCB JUMPER D0.6-P7.5	JW7.5T
JP1405	PCB JUMPER D0.6-P5.0	JW5.0T
JP1420	PCB JUMPER D0.6-P20.0	JW20.0T
JP1528	PCB JUMPER D0.6-P5.0	JW5.0T
JP1529	PCB JUMPER D0.6-P6.0	JW6.0T
JP1704	PCB JUMPER D0.6-P5.0	JW5.0T
JP2001	PCB JUMPER D0.6-P10.0	JW10.0T
JP2104	PCB JUMPER D0.6-P12.5	JW12.5T
RE2001	REMOTE RECEIVER MIM-93M6DKF	USESJRSUNT01
T1001⚠	SWITCHING TRANS 6701	LTT2PC0KT001
TU1701	TUNER UNIT VJ025AF	UTUNNTUSP029
W2	FFC(30PIN) AV-MAIN	WX1E7A00-002
W3	FFC(28PIN) AV-MAIN	WX1E7A00-003
X1501	CERAMIC RESONATOR ZTT8.00MT47	FY0805PLN004
X1502	XTAL 32.768kHz(+10/-20PPM	FXC323LLN001

SW CBA

Ref. No.	Description	Part No.
	SW CBA (SUB-B) Consists of the following:	----------
	RESISTORS	
R3001	CHIP RES. 1/10W J 300 Ω	RRXAJR5Z0301
R3002	CHIP RES. 1/10W J 620 Ω	RRXAJR5Z0621
R3003	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R3004	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R3005	CHIP RES. 1/10W J 6.8k Ω	RRXAJR5Z0682
R3006	CHIP RES. 1/10W J 6.8k Ω	RRXAJR5Z0682
R3007	CHIP RES. 1/10W J 2.2k Ω	RRXAJR5Z0222
R3008	CHIP RES. 1/10W J 1k Ω	RRXAJR5Z0102
R3009	CHIP RES. 1/10W J 620 Ω	RRXAJR5Z0621
R3010	CHIP RES. 1/10W J 300 Ω	RRXAJR5Z0301
	SWITCHES	
SW3001	TACT SWITCH SKQSAB	SST0101AL038
SW3002	TACT SWITCH SKQSAB	SST0101AL038
SW3003	TACT SWITCH SKQSAB	SST0101AL038
SW3004	TACT SWITCH SKQSAB	SST0101AL038
SW3005	TACT SWITCH SKQSAB	SST0101AL038
SW3006	TACT SWITCH SKQSAB	SST0101AL038
SW3007	TACT SWITCH SKQSAB	SST0101AL038
SW3008	TACT SWITCH SKQSAB	SST0101AL038
SW3009	TACT SWITCH SKQSAB	SST0101AL038
SW3010	TACT SWITCH SKQSAB	SST0101AL038
	MISCELLANEOUS	
W5	WIRE ASSEMBLY 3PIN SW-AV	WX1E7A00-005